Apple2000

THE NATIONAL APPLE USERS GROUP

DECEMBER 1989 VOLUME 4(6)

We Wish You A Merry Christmas

HAPPY APPLEING NEW YEAR

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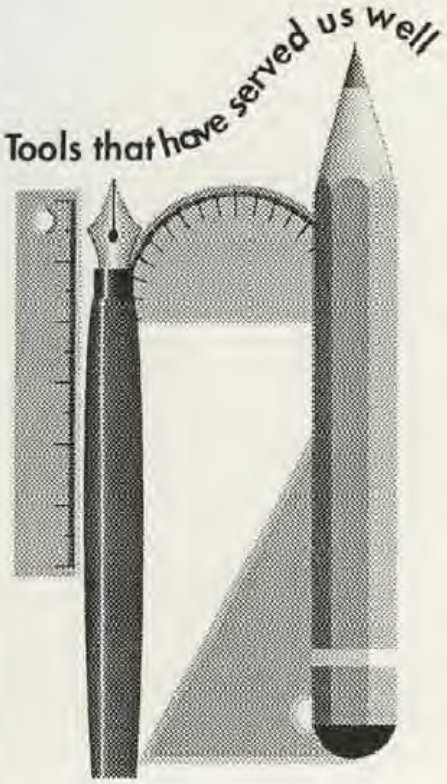

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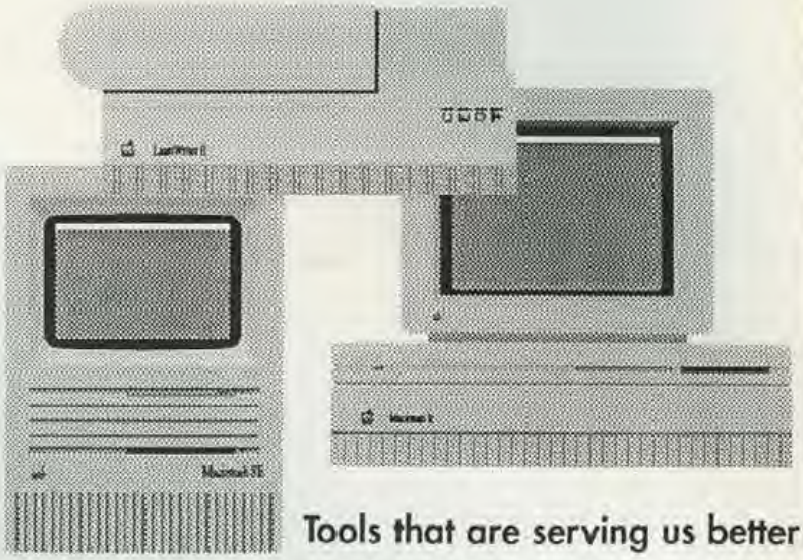

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Apple2000

December 1989

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Apple2000 supports users of all the Apple computers. The **ITT 2020, I, II, II+, //e, //c, //c+, IIgs, IIgs+, ///, Lisa, XL, Mac 128, 512 MacPlus, SE, SE/30, Mac II, IIcx, IIci, IIx** and **Mac Portable** Contributions and articles for the magazine are always welcome. We can handle any disk size or format. Please send to the PO Box, L21 8PY.

NOTE:
In general the front half of the magazine is for the Apple II, Apple IIgs and Apple /// The back half for the Macintosh and Lisa. Look out for the descriptive page icons.

Key:

Apple II, //e and //c
Apple ///
Apple IIgs
Macintosh, Lisa
Macintosh II

AppleXtras

A new service to members
see page 50 for details

There are a number of ways to contact Apple2000.

Force users who have a query about the service can contact the administrator, John Lee, directly for help and advice. Call him on the number opposite or send a message to his box on the Force.

If you wish to order goods or services from Apple2000, call Irene on [redacted] or (during office hours) call Alison on [redacted]. Both have Ansafones, in case they're not around. Alternatively you can Fax. to [redacted], write to the PO Box or (if you use comms) you can leave orders on TABBS addressed to the SYSOP.

If you are experiencing problems with Apple hardware or software Dave Ward and Tony Dart run the Hotlines and will try and help you.

We are very interested in the activities of local user groups, and if you have any information which you would like publicised John Lee would like to hear from you.

We reserve the right to publish, without prejudice, any advice or comments given to members in the journals of Apple2000.

A little praise for a few of our authors wouldn't go amiss. Send all comments, and contributions, via the PO box, especially suggestions about what you would like to see in **your** magazine.

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TABBS
Ewen Wannop - SYSOP
Modem [redacted]

Chairman's Corner

1980-1990

❑ First of all this month I have some announcements. John Elver wishes to apologise to anyone who turned up for the Mac/Apple event at Filton last month, and who missed the notice in Apple Slices. Since the event was first mooted, it grew out of all proportion, and John was obliged to postpone it till the spring of next year. We shall keep you posted as soon as we have a new date.

Secondly, the Apple II HotLine has a new phone number. It is still run by Dave Ward, and he will still answer queries on the old number. However he now has a spanking new extension to his house, complete with a dedicated phone solely for the Apple II Hotline. Please note the new number (0889 562859) and use it from now on.

Finally, a big welcome to all the new members we signed up at the Mac User show. I hope you find Apple2000 to your liking, and that you may be able to contribute to the Group in some way in the future.

The astute among you will have noticed the birthday cake that has been added to the designs at the top of this page. Apple2000/BASUG is ten years old next year. Started soon after the Apple II or should I say ITT 2020 hit the shores of England, Apple2000 has been supporting users of ALL Apple computers throughout its ten years.

We have seen the rise and fall of the Apple /// and the Lisa, and the rise and continuing success of the Apple II series and the Macintosh series. We shall be continuing to support ALL Apples, regardless of what new computers we may see launched in the future.

BASUG started as a group of volunteers who had a crusading desire to help each other in what ever way the could. We continue into 1990 in the same vein. We rely on the goodwill and boundless energy of a select band of helpers, and the input that all the members make with articles for the magazine. We are not able to pay for these articles, and can only offer the glory of seeing your name in print!

As various committments can take people out of this circle of volunteers, we have a continuing need to recruit new helpers into the fold. The most prominent opportunity to offer help is the AGM which is held in April each year, but we accept offers of help at any time! If you would like to help us, please get in touch with a committee member and offer your services. You may be just what we need!

And now a word from our sponsors ... or more correctly, a word about our advertisers. We have a number of dealers who advertise in the pages of Apple2000. We rely on these advertisements to help us produce a magazine of the quality you have come to expect.

Many of these advertisers show Apple2000 a great deal of goodwill. We would like you to return this goodwill and use these dealers wherever possible. Please also tell them where you saw their advertisement. This will make them feel wanted, and the whole cycle will be able to repeat itself. Some of the advertisers will offer a discount to Apple2000 members. Give them a ring and see what they can do for you.

Finally, I wish you all a very good Christmas, and a prosperous New Year for 1990.

Ewen Wannop

Annual subscription rates are £25.00 for UK residents, £30.00 for E.E.C. residents and £35.00 for other overseas members.

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The Editorial team is:

Apple II
Ewen Wannop

Macintosh
Norah Arnold
Irene Flaxman

Many thanks to all those who work behind the scenes and who receive no personal credit. These people are the stalwarts of Apple2000.

Additional thanks to Walter Lewis of Old Roan Press (051-227-4818) for our printing service, and to Ian Sharp of Sharp Studios (051-236 5442) for our cover design. (Graphics for the cover design supplied by MacMemories. Specialised fonts for the cover design supplied by Lexitrope.)

Apple2000 are Founder Members and Wholehearted Supporters of the **Apple User Group Council**

Letter Box

Apple /// Letterbox

Wimborne
Dorset

Dear Members,

In a University in Iraq there is an Apple ///, new but unused. Does anyone have any suggestions about what it could be used for? In this country, suffering from a severe shortage of foreign currency after the recent war with Iran, everything has to be used and there is difficulty in buying another computer.

I would like to hear from anyone who has software for this computer, whether in Roman or Arabic script. The operating system is there but probably nothing else. Copies of Public Domain programs would be welcome, especially if accompanied by operating instructions.

As I myself have never used on of these machines I have no idea what to advise the Iraquis.

EG Matthews

❑ The Apple /// is built round the 6502 chip but has 128k of Ram and an 80 column screen as standard. It runs under the SOS operating system. ProDOS was a development of the SOS system and is very similar.

If the operating system disks are there, then there should be an emulator disk to allow the /// to operate as an Apple II emulator. This will run a number of Apple II programs including almost all of the DOS 3.3 programs. However programs running under ProDOS 1.1.1 or later will not. However if you run programs under ProDOS 1.0.1 you might be able successful.

The /// has the same slots as the Apple II, so many cards will work in them, however the interrupt line is not active and so some communications programs may not work with serial ports.

This is about the limit of my knowledge on the ///. I do know we have some members who own these machines, perhaps they could help. Also refer to the article on page 18 of the April 89 issue of Apple2000 for more details of the /// and public domain software. **Ewen Wannop**

IIgs Font Letterbox

Market Drayton
Shropshire

Dear Sirs,

I don't expect you to publish this letter, but the information may be of use to you if anyone asks about the £ sign in TimeWorks Publish-It!

Publish-It! is one of the only two none GS software that I own (AppleWorks the other). It really is a great program, and it is more like a GS program than an ordinary Apple II program. The new Publish-It! 2 is vastly improved and offers many new features. The one criticism of Publish-It! is that the fonts don't have the £ sign in them. In a past edition of Apple2000 magazine I noticed that someone write in saying why didn't TimeWorks use GS fonts in Publish-It!, thus the £ sign would be in them. The following comments were taken from an article about GS ($C8) fonts, and Publish-It! ($F7) fonts:-

"Although the file structure between GS fonts and *Publish-It!* fonts is exactly the same, there is a difference in their design. TimeWorks, the company which wrote *Publish-It!*, has stated that their fonts are designed with a special aspect ratio. Most GS fonts have the wrong aspect ratio for use with *Publish-It!* and will appear to be squashed and narrow when use with that program.

The reason for the difference in aspect ratios, comes from the fact that most IIgs fonts actually originated on the Macintosh. On a Mac, the pixels (or dots) on the screen are square. On a //e or IIgs, the pixels on the screen are rectangular. *Superfonts*, by Beagle Bros., corrects for this difference within the program. The programmers at *Publish-It!* decided that a better solution was to design the fonts especially for the //e. This is why they used a different filetype for their fonts."

The part about Beagle Bros. correcting the difference is one to note.

Recently I received direct from Beagle Bros. in the US, their GS FONT EDITOR. To my surprise it not only edits GS fonts, but also **Publish-It! fonts**. It doesn't mind which format you are using (brilliant work by Beagle Bros.). It treats them both the same, only you know the format. It can't load one format and save into the other - it saves the format the original font was in. It is a good little program (except for a very annoying bug - you can't save to a different disk. You have to save to the disk you called the font from. You can get round it though, by going through the process of loading a font from another disk, but not actually loading it. It will then save to that disk), and doesn't have to have a GS to use it. It will also run on a //c and //c. It works exactly like a normal GS program, and you must have a mouse. It will swap the characters around with no problem, you don't have to redraw them. Eg. copy the £ over the #.

I then set about editing the $F7 fonts. The problem is that the fonts don't have the £ sign in them, they only have the keyboard characters (# instead of £). Thus I would have to edit # to get the £ sign. I then came up with a better idea. Use the £ sign from the many GS fonts available, and paste it over the # in the $F7 fonts. This worked perfectly, but because of the aspect ratios mentioned above, the £ looked too thin when used in Publish-It! You have to select pretty thick £ signs from the GS fonts, or edit the thinner ones to look right. I have matched them up pretty well. You couldn't tell that the £ signs came from different fonts. I had a problem with Wilmette.72, the Font Editor just would not recognise it. It does load point 72, so this was very strange. I converted it to a GS font, and it still didn't recognise it. I had to use a Public Domain GS font editor to draw it in, and then convert back to a $F7 font.

When you come to use the edited fonts in Publish-It! you still get the # on the screen, but when you print out you get the £. This is because when Publish-It! prints out, it takes the fonts from the disk - it doesn't load them into memory like the GS programs do. This the beauty of Publish-It! Using too many fonts in GS programs soon uses up the memory. In Publish-It! you can use as many and as large fonts as you want, and never worry about running out of memory.

If anyone asks you about editing the fonts in Publish-It! just mention the GS FONT EDITOR to them (it also has Helvetica and Times in sizes 54 & 72,

Please submit all letters and articles to the magazine on disk wherever possible. The disks will be returned to you when the magazine is published. If you have a modem, send us letters, articles and Public Domain programs either to BSG005 or to TABBS [illegible]

included on the disk). It has a few minor bugs, but the people at Beagle Bros. certainly know what they are doing.
Christopher Beckett

❑ Well we did publish the letter, and we have a review of the GS FONT EDITOR elsewhere in the magazine.

The problem of the pound sign being unavailable will probably crop up time and time again. The standard Macintosh font has the usual characters in the lower half of the font set, and has a large number of special characters in the top half. To get access to these characters on the Mac you simple use the Option key in addition to the normal key presses. Few programs on the GS allowed this to happen. However, with the new System 5.0 for the IIgs, AppleWorks GS now displays these special characters just like on the Mac. So pressing the Option key and the '3' key gives a pound sign.

Beware of changing the £ sign for the # sign if you intend to print to a LaserWriter. The laser font not having been changed itself, will still display the # sign. However, I would not expect that many are using Publish-It! with the LaserWriter.
Ewen Wannop

Hardware Letterbox

Erith
Kent

Dear Ewen

By now you will have received a letter for Jon Gurr of MGA answering my queries regaring the two pieces of hardware that was the subject of my recent letter to you.

You will also see from the content of that letter that I had another reply to my query so in all there was a very satisfactory conclusion to the effort put in by yourself and Apple 2000. many thanks.
Steve Hollinsghurst

Erith
Kent

Dear Jon

I am writing to thank you for your kind effort in answering the query I put to Apple 2000 re the TABS MODULES and the MOUNTAIN MULTIFUNCTION CARD. it was a pleasure to know that you had made the effort to clear up my confusion regarding those two items.

Just prior to receiving your letter I had a phone call from a Mr P Dyson who had a Multifunction card that had gone faulty and who offered me the faulty card together with the Software and the piggy-back board you mentioned and also a printer cable and the manual that went with the card. I have since received the items and installed the card and everything seems to be working OK. This was a relief particularly as when I bought the card it had no protection and had obviously been well handled and I feared that it would be useless, fortunately this is not so.

With regards to the TABS MODULES I must admit to a smile at your very ably pulling the ladder from under my feet by your "even if" statement. I can't say that I am over disapointed as I really have no use for the hardware and did not pay very much for them.

So thank you once again for you kind thoughts and my best wishes.

Steve Hollinshurst

RGB Monitor for £7!!

Dear Editor,

I do not need a colour monitor very often. I also lug around equipment occasionally and a monochrome is much lighter. When I bought a new IIgs system recently I therefore did not feel like spending the extra hundreds of pounds for a colour monitor. However I did also happen to buy a colour TV for family use and I chose a model which offers an RGB input via a SCART-type socket at the back (Salora model 15 L30).

The pin-out for the RGB socket was published in Open Apple (now A2 Central) last year. The connections for the SCART socket are included in the manual of the TV. All I had to do was buy a 15 channel male D-type plug and length of 9 channel cable from my Apple dealer, then buy a male SCART plug from my TV dealer (total cost 6 pounds and 75 p.), borrow a soldering iron, and I would have my part-time RGB monitor. The connections are shown in the table. My first attempt yielded a full-colour but rolling image. I had connected the Apple "synch" signal to the "blanking" input on the TV. A call to the Salora service department revealed that it should have been connected to the composite "video-in" input. A quick swap of pins in the connector and all was well!

Signal	Apple IIgs	Salora SCART
Red Earth	1	13
Red Signal	2	15
Synch.	3	20
Blue Earth	5	11
Blue Signal	6	9
Green Earth	9	7
Green Signal	13	5

Hardcore Pips

The BASUG archive continues this month the Debugging Tips from February 1983

More Debugging Tips

Some debugging hints were covered in the last Beginners Page. There are a number of things that can go wrong so we will carry on trying to sort out further problems.

Having carried out the tips in the last article, your program may still not work because you have errors which are errors of logic of some sort. These are harder to debug, because the computer doesn't tell you directly where the program is going wrong.

Consider the mistake of a misdirected line number.

```
10 FOR N = 1 to 10
20 M = N * N
30 IF M-N > 30 THEN GOTO 60
40 NEXT N
50 PRINT "NONE FOUND"
60 END
600 PRINT "IF N = ";N ; "THEN M-N IS GREATER THAN 30"
```

What we want to happen is that if the difference between M and N is greater than 30 then we print the value of N (which as shown below should heppen when N reaches 7). Because of mistyping in line 30 the program is directed to line 60 instead of the correct 600. By looking at the listing this is fairly obvious. However, this listing is short and because of this it is easy to pick the mistake up. This is often not the case, especially if line 600 does not come up on the screen at the same time as the offending line. Let us look at a procedure for finding out what the problem is. Running the program produces the prompt back.

You know it should produce a printed result, so your immediate reaction is to say "IMPOSSIBLE!! STUPID * # % !! COMPUTER" - but it is your fault in fact.

The first thing to do is print the values of N and M. Once you are out of the program in immediate mode then the variables are still stored within memory.

So just typing:-

```
? N,M
```

produces the answer:-

```
 7            49
```

A quick calculation with pencil and paper says this is correct. If N = 7 then M = 7 * 7 and if N were 6 then M would be 36, M - N would be 30 and so the value of M-N would not be greater than 30. Thus 7 is the value we expected to cause it to go out of the loop with at line 30.

By printing these values directly then you know that that part of the program is working correctly. Why then is is not going where you want it to? Where is it going? In this case looking at line 30 tells you that the mistake is that it is going to line 60. In more complicated cases it may not be as easy. It would be of great help if the computer told you where the program was jumping to.

Fortunately the APPLE has just such a means of letting you know what is going on. The special command is TRACE. If you set the trace on and type RUN as follows the screen should look like:-

```
TRACE
RUN
#10 #20 #30 #40 #20 #30 #40 #20 #30 #40
#20 #30 #40 #20 #30 #40 #20 #30 #40 #20 #30 #60
```

Every time the computer goes through the line it prints the line number with a '#' in front of it.

You can look at the listing and follow it through working out logically what should be happening. This is called "dry running", and would be useful to do this in case.

Line 10 first sets N = 1

Line 20 find the square of N and sets the variable M equal to it.

Line 30 checks the value of M-N with the number 30, if M is less than 30 then it ignores the rest of the line. Since M-N = 0 then the program moves onto line 40.

Line 40 sends the program round the loop, i.e. back to 20.

Line 20 says N is increased by 1 to 2. It is not yet equal to the limit of 10 so carry on to line 30 again and do the check once more.

It continues going round and round until, when N = 7, M-N is greater than 30 and the statement being true allows the GOTO 60 to be executed. The last line number printed out by the tracing routine is '#60'. If you have noticed this then the error is picked out.

In this case it is possible to put the listing and the trace on the screen. Normally great lines of accessed line numbers are generated and the your eyes will go funny trying to keep up with what is happening. One way to overcome this is to use the same facility you can use to slow listings down, the CTRL-S. Put the second finger of your left hand on the CTRL key and keep it there. Put your index fingers over 'S' key. By pressing the 'S' key alternately as an on and off key, it is possible to have very fine control over the scrolling.

Correct the error in line 30 by making it 600 instead of 60 and RUN the program again. What happened? All the line numbers appeared again with something on the end:-

```
RUN
#10 #20 #30 #40 #20 #30 #40 #20 #30 #40
#20 #30 #40 #20 #30 #40 #20 #30 #40 #20 #30 #600 IF N =7 THEN M - N IS GREATER THAN 30
```

The trace facility was still on and when it came to line 600 it carried out the print action straight after printing out the '#600". This is very useful if you wish to find out at which line number a particular statement is being output or where an input is expected.

The trace facility would be a nuisance hereafter so switch it off by typing:-

```
NOTRACE
```

The next stage is too long to carry on with so it will form the next beginners page. Meanwhile :-

More Syntax Errors

Type in the following lines and run them:-

```
10 LET PLANK=20
20 LET PLOB =30
30 PRINT PLANK
```

The answer will be 30 because the APPLE only interprets the first two letters of a variable name. To the APPLE therefore PL is the last variable name using those letters first.

So if you find your variable is not the value you thought it should be, think what you have called other variables.

This will not give you a syntax error, but if you have variables such as the following, you will come up with the

```
SYNTAX ERROR IN LINE xxx
```

where you have used it.

Such examples as NEWT, GROG, ANEW, AGREE would be interpreted as a mixture of the BASIC command. If you had typed in the following:-

```
10 LET AGREE = 5
```

When you listed it, it would come out as

```
10 LET A GR EE = 5
```

This is because the interpreter sees the GR of the graphics command and 'TOKENISES' it , that is it saves it as a special character of its own.

Try the following program :-

```
70 FOR N = 1 TO 8
80 Q(N) = M
90 NEXT N
```

and RUN it.

Since there is nothing output to the screen then there is no visible evidence that the program has done anything. The array Q0 has however been filled. This happens even when other parts of the program are writing to the screen. It is possible to find out if variables are what you think they are by inspecting them in immediate mode just by typing in from the keyboard, so that for example if you type:-

```
PRINT Q(3) <RETURN>
```

3 is the result

We can also use variables so

```
PRINT Q(N)
```

is just as valid. Try it and see that the following is the result

```
PRINT Q(N)
 0
```

So what is this? Surely since the loop has gone around from 1 to 8, N has become 8 why do we not get the value 8.

```
PRINT Q(8)
 8
```

is OK. So try

```
PRINT N
 9
```

NOTE !!! when you come out of a loop the value of the variable you are changing has always gone one more step than you specified. When the program reaches the NEXT in line 750 the value of N is increased and then it goes back to the beginning of the loop at line 700 and tests if the value of N is greater than 8. Only if it is not will it go through the loop again, otherwise it will try to find the line following the NEXT statement line numbered greater than 750.

It is sometimes the case that when running a program, you realise it is not going the way you thought. In this case you press CTRL C and try to sort it out from there.

Add line 75 as follows:-

```
75 FOR DLY = 1 TO 500: NEXT
```

This is a very useful general line. It is a time wasting statement, simply sending the line round and round 500 times so that time is used up. In this case it is there to make the program go slower so that we can press the break key before it has finished. You can see the delay as follows :-

```
TRACE
RUN
#10 #20 #30 #40 #20 #30 #40 #20
#30 #40
#20 #30 #40 #20 #30 #40 #20 #30
#40 #20 #30 #600 IF N = 7 THEN M
- N IS GREATER
 THAN 30
#70 #80 #90 #75 #80 #90 #75 #80
#90 #75 #80 #90 #75 #80 #90 #75
#80 #90 #75 #80 #90 #75 #80 #90
#75
```

Every time the computer reaches #90 the screen display stops.

Having switched off the trace function with NOTRACE, then RUN the program again and when it has passed the first loop and has printed out, and before it has finished press CTRL C. The message:-

```
BREAK IN 75
```

comes up.

This is a very important aspect of debugging. A program may appear to have gone away - technically known as 'hanging'. If you press <BREAK> then it will tell you that you have stopped at a particular line. If you now type

```
CONT
```

it will CONTinue where it left off.

In practice you would probably print out some of the variables in immediate mode in the meantime. This would in this case for example yield the following information:-

```
RUN
IF N = 7 THEN N-M  IS GREATER THAN
30
BREAK IN 75
OK
?N
 3
OK
CONT
OK
```

and you know you have broken into the program when the outer loop had a value of N=3. The value of N was preserved and it was able to carry on even though you had printed the value of N. You can even alter the value of N and still allow it to continue.

```
RUN
IF N = 7 THEN M - N IS GREATER THAN
30
BREAK IN 75
OK
?N
 3
OK
N=6
OK
CONT
OK
```

This means that you would not have filled the array when N was equal to 4,5 and 6. To show this type the following in immediate mode:-

```
FOR N = 1 TO 8: ? Q(N);:NEXT
 1  2  3  0  0  0  7  8
OK
```

The line containing the FOR ... NEXT loop should be on one line without pressing <ENTER> until the end of the line. Do not forget the ":" so that the values are printed in one line, or you will possibly scroll off the screen.

Now alter line 80 to

```
80 Q(N) = M
```

run the program again, without BREAKing and repeat the last exercise :-

```
FOR N = 1 TO 8 : ? Q(N);:NEXT
 49  49  49  49  49  49  49  49
OK
```

This time since M is fixed by the previous loop to 49, and all the values of the array are the same.

If this was an error of typing, missing the N key and hitting the M instead, you would have a clue instantly especially if you then printed M and found it to match.

One other way to pick up this type of error, i.e. of getting all the values wrong without at first knowing why would be to go straight to the appropriate loop directly. This can be done in two ways:-

```
RUN 70 or GOTO 70
```

They are both valuable tools. Suppose we carry out the same exercise and print the value of the array variables as before, using RUN 70, the result would be as follows:-

```
RUN70
OK
FOR N = 1 TO 8 : ? Q(N);:NEXT
 0  0  0  0  0  0  0  0
OK
```

The value of M has automatically been set to zero by the RUN command.

The command GOTO does not zero all variables. Try the following using the <BREAK> key to halt the program after the value of M has been set, and see that the array variables are all set to 49 again

```
RUN
IF N = 7 THEN M - N IS GREATER THAN
30
BREAK IN 75
OK
GOTO 70
OK
FOR N = 1 TO 8: ? Q(N);:NEXT
 49  49  49  49  49  49  49  49
OK
```

In fact, just to prove the point, the alteration of the variable first could be done as follows:-

```
M = 99
RUN 70
OK
FOR N = 1 TO 8: ? Q(N);: NEXT
 0  0  0  0  0  0  0  0
OK

or as follows
M = 99
GOTO 70
OK
FOR N = 1 TO 8 : ? Q(N);: NEXT
 99  99  99  99  99  99  99  99
```

The same tricks can be used with strings. If the string variable has not been assigned, it will not of course print anything. So the following holds

```
? A$:? B$
FRED
```

means that A$ was empty (a blank line was printed) and B$ had been set to FRED.

John Sharp - February 1983

Winter warmers from

BT

Bidmuthin Technologies
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Wordbench

Elizabeth Littlewood explores a powerful wordprocessor from Addison Wesley for the //e, //c and IIgs

Introduction

Wordbench is an integrated writing program meant for authors, in particular technical authors who would probably benefit most from the various modules provided. The program runs under Prodos 8 and is provided on 4 double-sided 5.25 inch disks and also on two 3.5 inch disks. It is not copy protected and is quite easy to install on a hard disk. A minimum of 128k is needed and the program is suitable for the Apple IIe, IIc, or IIGS.

There are three major parts to the program, a word processor, an outliner and finally a section which takes care of the presentation, formatting and output of the documents produced. These tasks and associated ones are covered by the following six Wordbench Applications:

Outliner
Notetaker
Writer
Print Manager
Folder Manager
Add-in Manager

As well as the applications modules there are a number (7) of Desktop Tools:

Help
Viewer
Format Tool
Reference Tool
Speller
Thesaurus
Word Search

The Help function was particularly welcome and I found it useful at the beginning as there is quite a lot to be learned about this program. There are a lot of functions to be memorised even although the desktop tools available are always displayed at the bottom of the screen.

The lack of a mouse was disconcerting (to a confirmed mouse lover) and I found I was reaching for it all the time at the beginning and in fact, even after weeks of use I still wanted to use the mouse whenever trying to position the cursor. How the cursor moves depends on different combinations of keystrokes and some I never remembered to use. Choosing items from a menu is easy, and the response is fast, and can be done either by using the arrow keys to highlight the required item or in some cases by typing the initial letter. The latter method is not always available but is the fastest way to move through the various levels of the program.

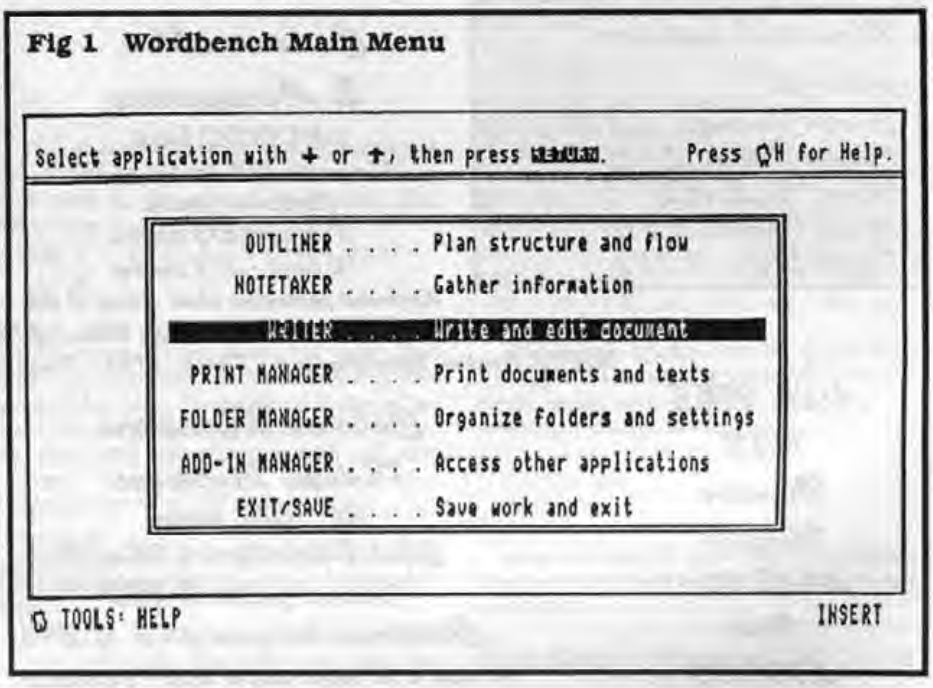
I also found at first that I disliked working on a screen of black background and white text. Although I still miss the ability to adapt screen and text colour to rest my eyes, I have in fact become used to the black and white and it is actually sharp and easy to read. The other problem with the program is that it is not WYSIWYG. The default printer is the Imagewriter II and though you can produce italics on screen you are not going to get italics printed out. Print-outs are therefore always going to look, in my opinion, as though they had been 'typed'. If using different fonts is really important, then the only solution would be to print the document as an ASCII file and export it to another program. This would seem to be a waste of time in using Wordbench in the first place unless some of its features were very much wanted.

I used this program over a couple of months and since I have to write articles and papers fairly frequently, I found it extremely useful. However my particular style of working meant that I never really came to terms with the Outliner as it simply felt artificial to set out an outline which I already had firmly fixed in my mind. On the other hand, the Notetaker was an invaluable part of the package. No doubt if I were writing technical papers then the ability to create and edit footnotes would also have been welcome. The same can be said for the easy creation of a Bibliography. The most useful of the extras was the Brainstormer in the Add-in Applications module. I made extensive use of the Freewriting session, not only was it exactly what was needed on many occasions to get my thoughts flowing but it amused me to find that it gently chided me and told me to keep writing when I momentarily dried up. That alone was almost enough to make me like this program and what's more I did as I was told and started writing again. The word processor is simple to use and easily keeps up with my typing speed which though not professional is quite competent and speedy.

The screen layouts are well designed with a large text area. Along the top of the screen is the Prompt area containing program prompts and instructions which vary according to which application is being run. The Status Line is found at the bottom of the screen and indicates whether you are in insert or overstrike mode. This is also where the list of available Desktop Tools is shown. As I said before, the Help tool is particularly important when first using this program.

When one of the tools or a macro is called then a new window pops up which overlays the main window. The new window is always positioned so

Fig 1 Wordbench Main Menu



that the portion of text being referred to, for example a word whose synonym is being sought, remains visible. This sometimes means the text beneath is scrolled but sometimes it means that the pop-up window is shifted. This slowed me down at first as windows and prompts weren't always where I expected them to be but once again I became used to it and came to appreciate that I would always be able to see the appropriate text beneath. There is one irritation about these tools, shortcuts (macros) and add-in applications which still exists and that is trying to remember whether to use <return> or <open-apple return> or <escape> to finish. There are always prompts available, true, but when working at speed one doesn't always look at them and the required keystrokes can vary quite a bit.

Documentation

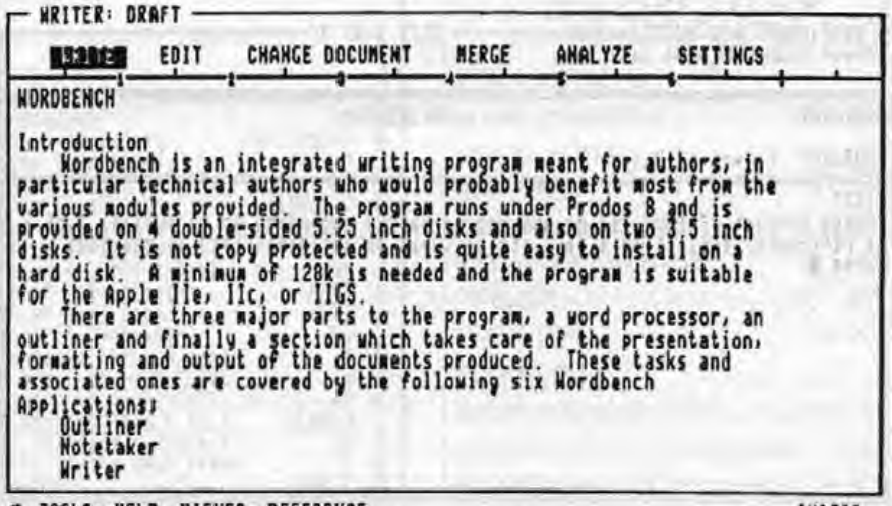
Like all Addison-Wesley products that I have ever seen, the packaging and documentation are excellent. The whole package arrives in a neat box which feels quite heavy which is not surprising since it contains two large manuals, a tutorial and a quick reference card as well as the afore-mentioned disks. The manuals are glossy covered, well indexed and contain some useful appendices. There are wide margins which I always like to see as I am one of those people who like to make marginal notes. The two main manuals are the User's Guide and the Reference Manual. The quick reference guide is on glossy card and the inside has space for notes about shortcuts designed by the user.

Tutorial

The tutorial manual is made up of four sessions lasting from 30 minutes to one hour depending on the lesson. The first lesson is about the basic use of Wordbench and starts with a reminder to make back-up copies of the disks and refers you to the User's Guide if you are still unsure about loading and starting up. Once you have the tutorial started up, you are taken through an entire Wordbench session using a file provided. Since this is the first lesson, it is primarily a lesson in entering text and editing it. Editing and enhancing blocks of text is also covered as is the ability to insert footnotes. How to access the on-screen help function is explained and a brief look at the Reference Tool is taken. How to create folders and save your work obviously is explained at this stage as you might want to continue practising with this lesson later on but leave the original file untouched.

Lesson two deals a bit more with the Reference Tool. Having had an earlier look at the Reference Assistant, we now also learn how to link notes to a reference, enter new references, edit and order or re-order them. How to use the Outliner and the Notetaker are the main themes of lesson two, however, and all the usual points are covered such as creating outlines or a set of notes and then editing them. Collapsing and expanding outlines is explained and also marking and sorting of notes.

Fig 2 Writer Menu showing Prompt and Status Lines



Lesson three effectively covers how to pull it all together, merging texts from the various sources such as outliner and notes and adjusting the format. The Brainstormer, which is an add-in application, is used in this lesson and finally the text produced is analysed in various ways e.g. spell-checking the text and performing word counts are two of the options available.

The final lesson deals with Wordbench Shortcuts, in other words how to create macros which use the option key in conjunction with another key or sequence of keystrokes. Twenty shortcuts are already available but you may re-define these as well as create new ones. By the time you have worked through all the above lessons, you will be able to use Wordbench adequately but there is so much available in this program it would be useful to spend some extra time on the learning process.

Wordbench refers to text files created by the Writer as documents, other texts being known rather obviously as outlines, notes and references. All associated text files are stored in a work Folder. How to create these is covered in the following short guide to some of the functions of this package.

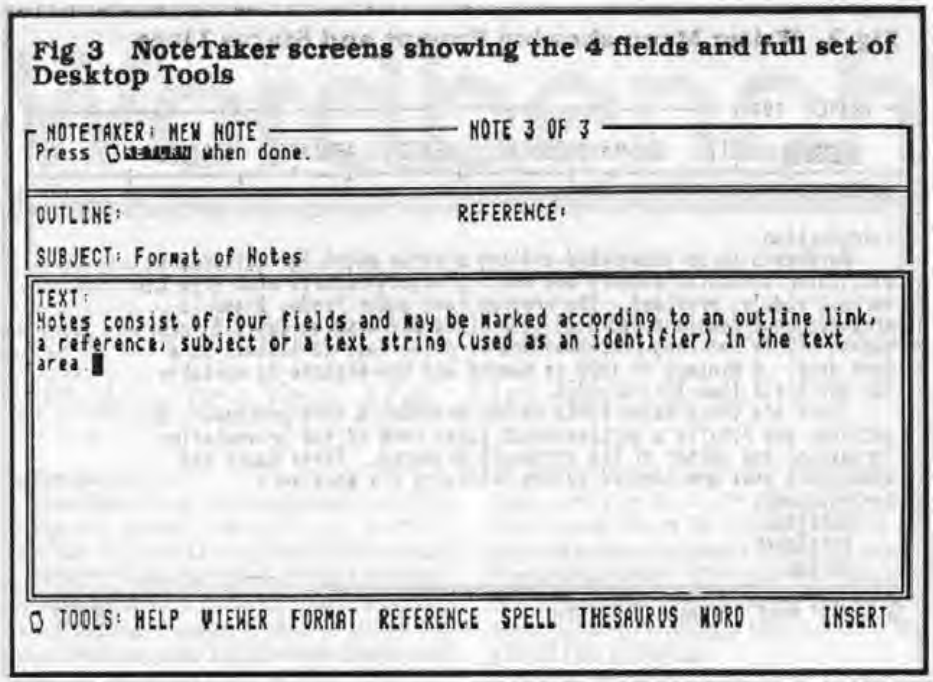
On first entering Wordbench you will be taken through a menu which establishes where your various folders are to be found and which work folder to use in this session; then you will be presented with the main program menu. This shows the six main modules mentioned at the beginning (see fig.1). Since word processing is probably familiar to most readers, let's start with the Writer.

Writer

When you enter the Writer a new menu page (see fig.2) is presented which allows you to start work on a current document unless this is the start of a new session. If this is so then first a list of documents in the Work Folder is shown. You then have the choice, as displayed in the File Selection Window, of working on a previously created document or starting a new one. You then choose Write from the Writer menu and you will have the normal text entry screen before you with the cursor positioned at the point you were last working. Both insert and overstrike mode of entering text is possible and sticky spaces, sticky returns and soft hyphenation are all provided. Although sticky returns will ensure that paragraphs are kept together, they may still spread over two pages, so the Format desktop tool should be used if the paragraphs are to be kept on the same page.

As well as the Format tool which deals with line spacing, paragraph indentation, underlining of text and such, there are Viewer and Reference tools. It is also extremely useful to be able to spell check a word, find a synonym or even do a word search when one is unsure of the spelling and all without leaving the text entry screen. One can of course also spell check the document from the main Writer menu. The Viewer is probably the tool that makes Wordbench such a flexible program. From the Viewer one may look at any text item in the current folder, any other folder and importantly the Library Folder. Having called some text into the Viewer it may then be copied wholly, or a selected part, into the current text field of the Writer or of the Notetaker when

Fig 3 NoteTaker screens showing the 4 fields and full set of Desktop Tools



working there. A more comprehensive merging ability exists in the Merge facility of the Writer main menu. Finally the Reference tool allows creation, editing and sorting of references which may then be copied into applications or marked for printing by themselves. For example, the references could be used as footnotes in a text document or printed as a separate bibliography. The Reference Assistant is also called up via this tool which will give guidance on the correct way to enter references to such varied publications as books, dissertations, Government publications, interviews, letters and periodicals. Miscellaneous entries such as those for film, paintings, radio programs etc. are also advised on.

The next entry in the Writer menu is the Edit facility. This has all the usual capabilities such as copy, move, delete, undo last edit etc. and many of these can also be called up without leaving the text entry by using Open Apple M. The Search and Replace functions are especially interesting in that they allow a search for a condition such as double spacing, a heading or a sticky space and so on and not just for text occurrences. This is also the place where you have the option of directly entering and editing footnotes.

The Change Document function is simply as its name suggests. The merging facilities called at this level via Merge let you merge in outlines, notes, or both as well as text from other Wordbench documents. You may also import text files from other applications which have been saved as ASCII files.

As well as being able to perform word counts and spell check the text, or mark misspelled words for later editing, Analyze offers Find Matching Words which means you can mark words which have been found to have a match in a word list. The word lists already on offer are a list of sexist words, commonly misused words and a list of wordy phrases. A punctuation list is also provided and new lists may be added by the user. Once words have been marked you can ask for only the marked text to be displayed and after viewing it choosing Unmark all Marked Text will then remove the markings. If you want to unmark only some of the special text it is necessary to use the Edit facility. The text may also be collapsed to display only the headings if wished.

Finally Settings is where one chooses how the headings should look, paragraph formats and tab settings.

While working on any text, it is advisable to save at regular intervals and fortunately this is easily done by typing Open Apple U so that one doesn't need to leave the work area and move up and down through the various levels of the program. In fact many functions can be carried out at all levels even if the method varies depending on the level you are at.

Outliner

The Outliner menu consists of the Outline, Collapse, Expand, Labels and Modify functions. Choosing Outline lets you start creating and editing a new outline or loads in the existing one. Only one outline of course is possible in any one folder. The outline may be up to four levels deep and each level can have as many as 26 headings but there is an overall limit of 255 headings in the outline. The Collapse and Expand functions are as they suggest and it is possible to collapse/expand one level or all the way. When an outline is collapsed, any headings which have subheadings are marked with an asterisk. Three different options are provided by Labels so that headings and subheadings may be identified by number and letter (the Standard format), numbers only, or no identifiers. In addition to normal editing while creating the outline, Modify caters for block editing and there are inbuilt protections which make sure you don't try for example to move blocks of headings to inappropriate places in the outline. Outline headings may be linked to notes created in the Notetaker and also merged into the working document in which case the outline headings become section headings and are shown in the format set up in the Writer menu.

The Notetaker

The Notetaker is probably the key to using Wordbench successfully. Not only can you use it as a means of jotting down ideas to be used later but the ability to link notes to an outline is particularly powerful. Starting a new document in the Writer by merging linked outline and notes could in fact be the document or at least the first draft of your document. The Notetaker menu consists of New Note, Mark, Browse/Edit, and Sort. Notes consist of four fields (see fig.3) and may be marked according to an outline link, a reference, subject or a text string (used as an identifier) in the text area. Compound selection criteria are allowed but no more than two fields may be chosen. A check mark is placed against any note that has been marked. When using the Browse/Edit facility, one then has the choice of seeing all the notes or only those which have been marked. Sorting of notes can be done either by Outline, Reference or Subject, otherwise notes will appear in the order that they have been entered. Notes linked to a particular outline heading will remain so even if the heading is moved to a new position in the outline.

Printing

All the settings for documents, notes etc. are made via the Folder Manager and so are the Print Defaults for all the various texts that can be produced i.e. this is where one decides how footnotes, bibliography, references and so on, as well as the main document text, should be printed. The Printer Manager is where one chooses which of the printer drivers to use, the Imagewriter II being the default printer. ASCII text may be printed by choosing the printer driver identified as Plain. One can also create a "new" printer and modifications may be made to the default printer codes if for example you would like to replace italics, which your printer might not support, with another text enhancement. There is a 6-page appendix in the User's Manual covering all the possible print settings for documents, references, footnotes, etc. and I don't feel I could possibly deal with them all here. Once you have chosen Print and selected, from the list of texts in the work folder,

Fig 4 Print Format settings just prior to printing a document

```
PRINT MANAGER: PRINT                    PRINTER: IMAGEWRITER.II
Do you want to change print format settings (Y/N)? N

Characters per inch (CPI):        10  Print Footnotes?                  NO
Characters on line:               78    Position & Numbering:     CONTINUOUS
Page Length (Lines):              66      Divider from text:          28 "_"
Top margin (Lines):                6      Start No. from:              1
Bottom margin (Lines):             6    Line spacing of note:     SINGLE+1
Left margin (Characters):          5    Text and note labels:       NUMBERS
Justification:                  LEFT      Position of labels:        NORMAL
                                          Space after note label:      ONE
Print text?                      YES      Style of note label:        BOLD
  Line spacing:                SINGLE      Style of text label:        TEXT
  Include all text:               YES  Print Table of Contents?         NO
  Treat page 1 as title page:      NO    Include heads through level:    5
Print Bibliography?                NO    Number heads through level:     3
  Outdent for first Lines:          5    Maximum length of heading:     48
  Lines between entries:            1    Filler between head & No.:  BLANKS
  Which to print:                 ALL    Page No, headers & footers:     NO
  Form to print:               SOURCE    Spaces to indent each level:     5
  Line spacing:                SINGLE    Line spacing:               SINGLE
  Title: Bibliography                    Title: Table of Contents
```

what is to be printed, you then have the option of overriding the default settings and making a final decision on how your printout should appear (see fig.4).

Shortcuts and Add-in Applications

Wordbench is already a program with a wide range of facilities to aid the author, but it doesn't end there. Not only can you customise Wordbench and define macros, known as Shortcuts to Wordbench, but the Add-in Manager allows for other applications to be added to Wordbench. One add-in module is already provided, the Brainstormer. There are four brainstorming modules to choose from, two of them designed to encourage the flow of ideas and two to help you be concise when defining your aims. These are Freewriting, Invisible Writing, Goal Setting and Nutshelling. Invisible writing which displays asterisks rather than the text you are typing is essentially a variation of the Freewriting option. Freewriting was the one I used most frequently. You may set a time limit for yourself but when it is reached you may extend it if wished. No editing is allowed in this mode and if you stop typing for more than a few seconds you are reminded to "Keep Writing". As I said, it works! The final text can of course be copied into Writer and editing can then be carried out there. You will almost certainly need to do so! Nutshelling and Goal Setting both use the principle of restricting the length of text entry. You are therefore forced to set down your ideas as concisely and clearly as possible but some simple editing is allowed so it is possible to work at refining your ideas before saving them. Nutshelling allows 8 lines of text in which to state the main idea of your work whereas Goal Setting, with only 2 lines per category, is intended to help you identify Subject, Point of View, Audience and Purpose, these being the 4 categories presented.

Conclusion

Altogether, Wordbench is quite an impressive package but I feel that this article can only been a brief overview. The learning curve for this program is probably a long one and there is always a tendency for humans to stop at the point where they can get reasonable results.

However to get full value, I think one would need to persevere a bit longer than I did. It is undoubtedly a package most useful to authors although the word processor can be used for any text file production. The lack of WYSIWYG is a drawback in this program, otherwise the documentation and performance are both of a high standard and I would say this is definitely value for money in a possibly specialised market.

Elizabeth Littlewood ♦

info

Product : Wordbench
Publisher : Addison Wesley
Available from :
Shop2000
P.O.Box 3
Liverpool
L21 8PY

Price : £154.22 inc VAT + P&P

Value : ♦♦♦♦
Performance : ♦♦♦♦
Documentation : ♦♦♦♦♦

Apple IIgs Linkup to Sinclair QL

Stuart Aitken talks to the opposition with his IIgs and describes both the success and the pitfalls

Introduction

A friend and myself recently had the idea of linking our two computers together via their RS-232 serial ports; it was a kind of challenge. We thought that it would take days and prove to be really difficult, but fortunately it didn't, even though the serial ports tried to hinder us. We achieved our aim in that we were able to talk to each other and also transfer files, both ways.

Problems

The first problem was the RS-232 ports (Note: although the Apple IIGSs port is an RS-433 port, it is compatible) - what pins would we link together? Had we both had the standard 25 way 'D' socket, it would have been easy, just requiring a standard 25 way plug to 25 way plug cable (and possibly something else - see later on). But do Apple or Sinclair stick to the standard? No, Apple using the elusive 8 pin Mini DIN connector and the QL having a slightly easier to obtain 6 pin BT phone plug. The diagram below shows the way RS-232 ideally works:

```
GND------- GND
TX --------- RX   ( TX = transmit)
RX--------- TX   ( RX = receive )
HSOUT --- HSIN  ( HSOUT= hand-
              shaking out )
HSIN ------ HSOUT ( HSIN = hand-
              shaking in )
```

Handshaking is an interesting thing, often confusing. It works like this - The HSOUT line tells the other device whether or not it is ready to receive data (e.g. its buffer may be full up). It is only enabled when the first device is ready to receive. The other device should check its HSIN line and only transmit when the other device indicates that it is ready. This works both ways. Some ports don't support handshaking; others won't work without- it can be important. The problem is that the handshaking lines aren't given simple names like HSOUT and HSIN, they are called DTR (Data Terminal Ready), DSR (Data Set Ready), CTS (Clear To Send), RTS (Ready to Send) and others. When two different devices have totally different handshaking lines, it may not be clear which to connect to which. A manual that has pin-out details of the port should provide the answer, by indicating which pin is the handshaking output and which pin is the input. However, do remember that the output of one has to be connected to the input of another, and vice versa.

This leads me nicely onto another problem, namely that there are two different types of RS-232 ports, DTE (Data Terminal Equipment) and DCE (Data Communications Equipment). A DTE port is correctly wired, but on a DCE port, the receive, transmit and handshaking pins are reversed. This was so that if you had a computer with a DTE port, it could be connected pin to pin to a modem, that had a DCE port. I mentioned earlier that it would be easy to connect two 25 way 'D' ports together - in actual fact, difficulties may be encountered with the DTE/DCE problem. If you are connecting together two computers with different RS-232 ports, there should be no problem, but use a lead that connects pin 1 to 1, 2 to 2 etc. However, if you are connecting together two 25 way 'D' ports that are the same (e.g. both DTE), either you will require a cable that crosses the appropriate wires or an ordinary cable and something like a wiring box, that permits you to link the pins you want. My advice, if you are trying to link two ports that have totally different sockets, is first, make your own cable, or modify a cable and secondly, so as to not get mixed up with the pins, is to use the DTE port where there is an option (if there is only one port, it is likely that it will be a DTE port). Finally, before connecting up, be sure you know exactly what you are doing, as a wrong connection could leave you with a lot of dead computer!

In my opinion, you really need some commercial terminal software. However, some Basics, such as the QL's, have commands relating to serial ports and you may be able to write a simple piece of terminal software in Basic, but you will be unlikely to be able to transfer files using this. Obviously, both computers will have to use the same baud rate, but they also must be using the same number of start, stop, data and parity bits, which I feel is often overlooked. Beware of faster baud rates which may only work with specific combinations of start and stop bits etc. I had no problem transmitting or receiving data at all baud rates up to the Apple's maximum of 9600, although I would advise something slower, because at that speed buffers could be filled very quickly and if the cable is unshielded, a noisy line could cause corruption of the data.

Transferring files was no problem at all, using a terminal program; the handshaking worked fine - no data was lost. However, be careful in a powerful Basic - the QL Basic can copy a file from disk to the serial port, but there was a problem in that the file header information was transmitted also. If transferring graphics files between different makes of computer, it is very advisable to convert the file to a standard format, such as GIF (Graphics Interchange Format), as trying to write a Basic program to interpret a "foreign" graphics file is very difficult! There is a program to do this on the IIGS in the Apple 2000 library, called Showfile. In my opinion, such a link would be best for text files, as these are most likely to be needed to be transferred from one computer to another. When transferring program specific files, such as Appleworks files, first get the program to make an ASCII copy of the original file and transfer this. dBase II won't be able to make head or tail of an Appleworks file, but it could do something with an ASCII file.

Conclusion

My RS-232 link up was a great success and I was, to a limited extent, able to control the IIGS (in Basic), from the QL, and vice versa. It was also very cheap, as I simply connected a 25 way 'D' socket to my modem cable and then wired this to a terminal block that went to the serial port on the QL. Total cost = £3.25. I would recommend it as a good way to transfer data between two incompatible computers.

Stuart Aitken

The 'L' Test

Learner drivers test experience:
My first Hard Disk Drive
by Bill Mealey

I decided I could do it I had read and reread all the articles in the magazines about the SCSI Hard Disk and after seeing Ewen Wannop's feature in the April Edition and Nibbler in the following edition I decided to have a go.

DEREK HUGHES of Seagale mentioned in Nibblers writing supplied me with a ST 277N-1 64mb. SEAGATE DRIVE and a massive 150watt power supply with its own cooling fan for the very reasonable sum of a little over £400. he also supplied the required software, a pleasure to deal with him, the drive arrived within 24 hours of my order.

I noted that the Apple SCSI card required for use with the Seagate ST277N-1 had to be the"C" Rom version. I phoned my order for the Apple SCSI card and a cable to BIDDMUTHIN, STEVE MORRISBY spoke to me and took my order, he warned me that this was a difficult project and that the warranty on the card would be void if there was any trouble.

The card and cable arrived, card OK, cable wrong type (I must remember to send it back).

Try as I could I was not able get anyone to supply the correct cable, in the end I made up my own using the wiring diagram from the Apple 2000 Magazine April edition.

Then I tried to buy a case, any kind of a case, no luck there, all the Apple people I tried to buy one from had had requests for this item before from DIY people and said they could order one BUT it would take some time etc. etc. , so I finished up making my own case, I had this 150 watt. power supply in a great big case with its own fan this was redesigned into the drive case that I had made up and the unit was finished.

Now I had the whole bag of tricks together I found that the drive had 5 pairs of ID pins and the illustration for the drive in the Universal Manual only had 4 pairs, I could not find any information for the ID jumper connections, many phone calls later, and after I had been told that I would not do any damage with the jumper connections if I used the wrong pairing, I tried all the permutations that I could think of without any success. I could not get past the first partition stage, not having any experience with hard disks it took me some time to convince myself that it might be something other that the ID connections.

I found out that Ewen Wannop was away for a few days, that source of help was cut off for a while.

During the time I had been trying to find out how to wire up I had been rereading all the magazines I could lay my hands on I read a feature on hard disks in Computer Shopper by Paul Mullen. from the Computor Advice Centre, Tonbridge. I phoned his office to speak to him, he was away, and one of his colleagues Martin Saul. could not have been more helpful he listened patiently to my tail of woe and he said he was sorry he had no experience of this drive and he could not find any references in his office, then came up the most helpful of all suggestions why don't you ring up the makers?. Yes, he then gave me the phone number for Seagate UK. I thanked him for his information.

The gentleman from Seagate gave me the connections and promised to post a me a proper manual for the ST277N-1 (it arrived) he then asked me had I got anything from the drive at all. He told me to disconnect the cable from the drive to the CPU and power up the drive, (this allows the drive to do a self test routine) then count the number of flashes on the drive LED this indicates the state of the drive, I did as instructed and I counted 8 flashes, I reported this to my newfound friend whereupon he told me the drive had a READ OPERATING SYSTEM MICROCODE FROM DRIVE fault (whew what a mouthful) and the fault was not serviceable by user he advised me to contact the supplier and inform him of our conversation and to obtain an replacement drive.

Soon a new drive was on its way to me, the old one returned and a credit note promptly issued for the old drive.

I used the information from the feature on Hard Disks out of the April Apple 2000 magazine and followed step by step the instructions using the software outlined in this feature.

Within a hour or two of receiving the new drive it was up and running and I saw the HARD DISK DRIVE ICONS for first time on the IIgs. it was a great feeling. After sorting out the missing mbs. I spent some time finding the best Interleave by following the instructions on the SCSI. HACKER disk settled for 11 and started TEST UNIT and patiently waited (this takes some hours) saw on the screen UNIT PASSED. . . . . I threw my 'L' plates away, and that is the story of how I passed my test.

I can not recall any of the articles that I have read mentioning the DISK test without the CPU being connected, it would have saved me a lot of time had I known.

Finding the case and cables is the only problem unless you can get them made for you, the rest is easy, I can not understand now why I thought it was difficult, read the manual, make sure you have the correct software and cable connections, power up and follow the menu prompts.

The moral of this story is find an expert to advise you, if you need help, I found all the people I asked for assistance most cooperative if they are reading this thank you one and all.

Regarding my driving test, I gave myself a pass, if I can do it anyone can.

Bill Mealey

Background material on writer.

Bill Mealey was a National Paper (Daily Mirror) picture editor working out of the Manchester office he took to computers when he found that it was more fun to type letters with a word processor after he retired a couple of years ago, he started with an Amstrad 8626/ then on to a to EuroPlus/ likes using Apples, now using 11e and 11gs. thinking about a Mac. his only regret is that he didn't get hooked on computers years ago.

GS Font Editor

John Beattie looks at the new Font Editor from Beagle Bros

As a great fan of Appleworks GS, the lack of a version localised (or should I say localized ?) for Great Britain has bothered me since I got Appleworks GS almost a year ago. Its inability to delete words from the original dictionary(making color, for example, an acceptable spelling) is a minor nuisance; its inability to show and print a £ sign was something which drove me to a seething rage of frustration.

All the more so since the majority of GS fonts already contain the £ sign.

Unfortunately, this has been relegated to ASCII 163 and, since most programs (Appleworks GS included) use, show and print only those in the range 0 to 128, the £ sign remained unreachable.

Certainly, some shareware programs (Font Doctor, Font Editor and Font Switch - all available from Apple 2000) could show the availability of the £ sign and, with some judicious "wing and a prayer" juggling, I had managed to produce a font with a £ sign in a reasonable number of sizes. But it wasn't easy.

Enter Beagle Bros' GS Font Editor to the rescue!

The package

It is everything a good commercial package should be: well packaged and presented, with an excellent manual, it comes on both 5.25 and 3.5 inch disks and is hard disk and ram disk installable.

It works on the IIe, IIc and IIc+ as well as on the GS. Why would anyone want to use a GS font editor on these other machines, you might ask. Well, GS Font Editor can be used to modify GS fonts so that they can be used in Publish It and other non-GS programs.

Here I should, perhaps, declare an interest. GS Font Editor was originally a Styleware product and was held up by that company's absorption into Claris which was mainly for the purpose of Claris obtaining Appleworks GS. However, Beagle Bros., who have been heavily involved in Classic Appleworks add-ons, have picked this up, put finishing touches to it and released it under their label. Before Apple 2000 was approached by MGA who supplied the copy for review, I had already seen GS Font Editor advertised in In Cider and had asked a friend going to the States to get it for me.

So I was already committed to the idea of GS Font Editor and I certainly wasn't disappointed by the reality. It is a program which follows the Apple Golden Rule that you should be able to take it from its package, boot it up and start doing some useful work within 10 minutes or so. It is also a program which has depths which are well documented in the manual.

Booting the Program

Booting up presents you with a main screen with a menu bar in the usual format comprising Apple Symbol, File, Edit and Special.

The screen then is split into left and right portions : the Font window on the left, showing, in a grid pattern, the characters present in the font currently loaded for editing. The characters are not shown in the font itself in this window, this is left for the right hand section of the screen where Samples of the font are shown, in plain style.

Clicking on the right hand portion clears the Samples area to allow you to type in any characters you may wish to view. This is necessary since in the larger sizes of fonts, there is not room to show all the characters in the font at once.

Using The Font Window

The Font window is a 16 by 16 grid with spaces for all the possible characters (255) in a font, plus the missing symbol which is usually an empty rectangle. Clicking on a character in this grid takes you to the Edit screen where the character is displayed, with its ASCII code in hex and decimal above it, six boxes to the right of it showing the character in each of the styles - plain, bold, italic, underline, outline and shadow, while to the left there are 8 tools with which to alter the character.

Again, these tools follow the Apple guidelines and comprise marquee, hand grabber, four arrows, pencil, eraser, straight edge, rectangle and oval. The only tool which is unusual here is the four arrows which move the font rectangle without moving the character. Even Beagle Bros. say that they're not sure why this is useful but that the Macintosh font editors they've seen let you do this so they figured they had to build it in, too!

Editing

Editing a character is a straightforward process, using the tools available. The font can then be saved with the same name (i.e. over the original) or with a different name so as to preserve the original font intact. Again, the manual sets out the alternatives and examples of "good" and "bad" font names for your guidance.

Characters can be cut or copied and pasted into new locations in the grid, so that it is not necessary to build a new character completely from scratch. For example, an accented e could be created simply by copying and pasting an e into a new grid location, then adding the accent and resaving the font. The accented e would then be available by the keystroke which accessed the new grid location. To assist in this, the manual contains a Key Chart showing the keystrokes required for each of the 255 ASCII characters. Since these vary from the straightforward pressing key m to get the character m to pressing Option u then u again to get ü, this chart is most helpful. Copying, cutting and pasting could also be used to customise a font for use, for example where a teacher of a foreign language wanted to write class questions using French or German characters but did not want to have to remember awkward keystroke sequences, the characters could be cut and pasted into easier locations, perhaps using the locations of characters not needed by the teacher.

The Special Menu

The Special Menu lets you scale an entire font to make it larger or smaller, hide the styles of the character being edited in the edit window, get information on the current font's name, size and ID and edit the next or previous character, automatically resaving the font changes as it goes.

Using The Program

I have used GS Font Editor over the last 3 weeks both to modify characters in a font individually, switching them into handier locations, editing them to look different or creating new characters and to work on whole fonts, renaming them and resizing them. I have never been able to get GS Font Editor to misbehave: it does what it sets out to do without a hitch.

For those of you with Appleworks GS a tip and a word of warning: it seemed that it would be easy to change the Shaston font by switching the $ sign to the £ sign and thereby let the Spreadsheet module display figures with a pounds instead of a dollar format. This I thought could be accomplished by switching the $ and £ characters in the font and resaving the font. However, if you look in your fonts folder in the system folder, you'll find only Shaston 16. Change this and, although you can then print the £ sign in Better Text quality in both normal and condensed mode, you will still get the $ showing up in all other prints. This is because Shaston 8 which is the font used by the Spreadsheet module is, I believe, held in ROM and can't therefore be modified. The reason it works in Better Text mode is that the GS looks for a font twice the size when printing in this quality and, when it finds the modified version of Shaston 16, it uses this.

Conclusions

So, all in all, a most useful and informative package. I feel I have learned more about fonts and their construction from the manual to this program than from any other source (including A2 Central's special issue devoted to fonts). The manual has a dry, laid back sense of humour that makes you feel that font editing is easy.

With the advent of GS/OS System 5.0, things have changed for the better and now, like our Macintosh brethren before us, we can, by additional keystrokes, access those characters formerly unattainable. For example, to get a £ sign both on screen and in print, you now press Option and 3 and, if the font being used has a £ sign at ASCII 163, it will be accessed by System 5.0. However, there are still many uses for GS Font Editor, from simple scaling up or down sizes to the creation of a character not included in that font. And, although you normally think of characters as letters or numbers, they can be symbols or pictures: one friend is thinking of constructing a font holding his firm's logo as a character which would then be easily accessible and printable from within a document.

John Beattie

info

Product : GS Font Editor
Publisher : Beagle Bros.
Available from :
MGA Softcat
Pear Tree
Appledore
Kent TN26 2AR
(0233) 83571
Price : £39.95 inc VAT + P&P

Value : ♦♦♦+
Performance : ♦♦♦♦♦
Documentation : ♦♦♦♦♦

Apple IIgs Machine Language for beginners

Dave Ward reviews a primer on Machine language programming

Apple IIgs Machine Language for beginners is a book published by Roger Wagner at about the same time as Merlin 8/16 first appeared. Roger Wagner was once a teacher before forming his own software company SouthWestern Data Systems which may explain why his book Assembly Lines gets it deserved eulogies as a teaching aid.

What does it claim?

The book Apple IIgs Machine Language for beginners does what it claims and more. It starts off discussing Applesoft BASIC versus machine code through how to write machine code programs from Applesoft. It describes three assemblers; the one you get free with the machine (the mini assembler), Merlin 8/16 and APW from the Apple Programmers Workshop. The basics of machine code programming such 65816 registers, loops, counters, logic, shifting and simple mathematics are treated fully. The more difficult concepts of addressing modes and data storage are discussed, too. ProDOS 8 and ProDOS 16 are covered followed by the Apple IIgs and its memory management and tool box routines. Finally you are guided along the path to produce a simple painting program using many of the Apple IIgs tool box routines. In each chapter the necessary 65816 instructions and addressing modes are discussed until by the end of the book almost all will have been described in detail.

How big is it?

The book has a little over 600 pages divided into 20 chapters and five appendices. A 3.5" diskette containing all the programs is available at an extra cost. I decided that I'd do better by typing in these demonstrations rather than get the diskette. That proved to be a mistake and I would like to thank MGA Microsystems who came to the rescue by providing me with one.

The Chapter and Verse

Let's just delve a little deeper into some of those 20 chapters:-

The first chapter discusses the need for machine language by comparing it with Applesoft BASIC. Then follows the use of PEEK and POKES from Applesoft to produce machine code programs that can be CALLed from Applesoft to execute them. This flows well into the second chapter where the 'dreaded' hexadecimal number system, which is a prerequisite of machine language programming, is neatly covered and made clear. This is followed by some simple machine language programs.

Chapter 3 deals with the Apple IIgs mini assembler. This mini assembler actually appeared in the first Apple][computers with the Integer BASIC in ROM but disappeared when Applesoft BASIC in ROM arrived with the Apple][plus. Fortunately it re-appeared in late Apple //c and enhanced Apple //e computers with a few additions. The Apple IIgs incarnation is, however, vastly superior to the older versions in its capabilities, although many wouldn't call it an assembler because you can't use labels!!

Chapter 4 shows how to use Merlin with small demonstration programs.

Chapter 5 uses the same demonstrations to show APW the Apple Programmers Workshop. Those having both assemblers available may notice that APW is more difficult, long winded to use and assembles source file very much more slowly. Beginners, in particular, will find Merlin by far the easiest and pleasant to use. Don't, however, get me wrong! APW is, perhaps, the most highly featured Apple IIgs assembly language system available and is invariably the choice of professional programmers.

The next six chapters deal with programming concepts such as counting constructing loops and making comparisons. Simple arithmetic of the 6502 and 65816 is described and the logical operations are covered, too. The 65816 and 6502, too, are endowed with a wealth of addressing modes and these are fully covered using a printing program as a demonstration. Data storage, an important area a programming is included.

Chapter 12 is for Applesoft programmers who want to use machine language routines then ProDOS 8 is discussed. At this stage you will be about halfway through the book. Most of the book so far will be of interest to all Apple // computer users.

And there is more!

The rest of the book is for Apple IIgs users only since it uses the goal of an Apple IIgs desktop simple painting program. The Apple IIgs is not only a fast classical 8-bit Apple // computer largely described in the first half of the book but a 16-bit machine with the possibilities of 8 megabytes of RAM and a whole toolbox of subroutines in ROM and RAM that allow one to produce desktop programs with windows and mouse input just like the Macintosh. To use all this extra memory and power a new operating system ProDOS 16 (now GSOS) has arrived and this is described in detail first followed by details of a set of tools called The Memory Manager. With all that memory available some method of managing it is necessary and to effectively run a full-blooded Apple IIgs desktop program you'll need to make full use of The Memory Manager. Through the rest of the book all the necessary tools from the toolbox are described in text and by the example of producing programs which slowly attain the goal of the simple paint program.

Conclusions

When you've read this book a few times and tried out all the programs you still won't know all there is to know about Apple IIgs programming and the toolbox, but an appendix gives a list of further reading. Other appendices list all the instruction of the 65816 in some detail, explain the commands in the Apple IIgs monitor and a listing of a ProDOS 16 program that open reads and closes files, written in Merlin 16, of course.

Final Thoughts

Apple IIgs Machine Language for Beginners is an excellent book correctly deals with machine language programming for the two machines which constitute the Apple IIgs. The book contains a lot of useful information not only for beginners but also most other Apple // users. My copy of the book is fast becoming 'dog-eared' due to over use.

Dave Ward

Apple IIgs Machine Language for Beginners :-

Author :- Roger Wagner
Publisher :-
COMPUTE! publications
Greensboro
North Carolina

You can purchase this book from MGA Microsystems at £19.95 with the diskette as an extra £15.95.

War in Middle Earth

John Kishimoto descends into the abyss of a Tolkien adventure

Introduction

Reader's of J.R.R. Tolkien's classic "Lord of the Rings" will no doubt immediately recognise the location of this adventure/strategy game. Those who have not had the opportunity to read this book will find the manual instructive, and provides a good background to the scenario and main characters. The action takes place in the whole of Middle Earth, the objective being the delivery of the One Ring to Mt.Doom in Mordor. Frodo Baggins, unlike the book, does not have to carry the Ring to Mordor himself. Should he perish in an encounter, another character can carry it to Mt.Doom. It should be said at this point, that the book is not a particularly good guide in helping you along in the game. Although the objective is the same, the evil Sauron has a significant number of allies, in the form of Nazguls, Trolls, Wights and other creatures, making a straight assault with a small team very difficult. A number of potential allies exists in the form of Elves and Dwarves who, when presented with appropriate gifts (to be found around Middle Earth), will mobilise and provide the necessary manpower.

The Levels

The game is presented in three different levels. At the Full Map level, the whole of Middle Earth is visible, giving a generalised view of the deployment of forces. Those under your command as flashing blue dots, Sauron's forces as red dots, and those that are uncommitted as green dots. As with most Apple II GS games, control is achieved by using the mouse and activating various icons on the screen. At the Full Map level, you are presented with four icons.

The Eye allows you to look into Galadriel's mirror, the enchanted pool found in the kingdom of Lorien. The resultant window informs you of friendly and evil force activities.

The Scroll icon allows you to save the game on the current game disk (disk 2). Unfortunately, you are allowed to save only one game on the disk, so if you require backup, you will have to copy the complete disk.

The Hourglass icon changes the perceived time scale of the game into one of three states: Normal, Hasty and Very Hasty. Although Very Hasty is useful in the early stages of the game, later on a more sedate time scale will be necessary.

The Magnifying glass provides a very quick way of examining any part of Middle Earth. Just click on the icon, then move the resulting magnifying glass pointer to any point on the map you wish to examine. Using this option magnifies the Map of the selected area, bringing you to the Campaign level.

The Campaign level gives you a detailed view of the selected area which can be scrolled in all four directions by using the mouse. At this level, you are presented with terrain features such as towns, hills and rivers. Individuals and groups are represented by small figures, the figure being the character commanding that party. Forces are shown as a shield, the shield design indicating the type, such as a spear for light infantry or a scimitar for Corsairs. A flashing shield indicates readiness of the force to accept commands. As in the Full Map, a series of control icons line the right hand side of the map.

The Eye icon at the campaign level gives you status information on the selected character or force.

The Map icon takes you back to the Full Map level.

The Hourglass is the same as that described earlier.

The Arrow icon allows movement commands to be issued to forces or characters.

The Magnifying glass, as in the previous case allows closer examination of a section of the map. Selection of this option takes you to the Animation level.

At this level, all characters or forces are visible as animated characters on the screen. Although small groups are accurately represented, large forces such as cavalry, are represented by a small number of horsemen. Clicking on any character will tell you who they are and what they are doing.

As in the previous screens, a series of control icons are available. The Eye and Map perform essentially the same functions as before, except that the Map takes you back to the Campaign level.

The Provisions icon enables any one of the displayed characters to put down, collect or use an object.

The Game

As described earlier, the primary objective of the game is to take the One Ring to Mt.Doom in Mordor. Scattered across Middle Earth are forces which can potentially be your ally or form formidable opponents. Using the icons for control (at the campaign level), you can manipulate the Fellowship to travel in directions which enable you to avoid potential problems. Unfortunately, although Nazguls and Orcs are clearly visible on the Map, other creatures, such as giant spiders, wolves and wights can attack at any time, making travel something of an ordeal. During your travels, however, you can occasionally encounter strangers who may impart some item of information to you, which can be of significant benefit. Such encounters at the campaign level offers you the chance to go to the animation level to watch the meeting, or simply continue on. If you are given a clue as to where an item of interest can be found, you have to travel at the animation level in order to actually see and collect said item. At the campaign level you cannot find or manipulate an object.

Encounters with opponents will lead to combat. At the animation level, you are given a degree of control over your characters. By clicking in boxes within the combat window, you can control individuals to charge, engage, withdraw or retreat. The default selection is engage. The combat window will also give indications of force strength (if a large group is engaged in combat) or some measure of health of the individual character (black for healthy, red for wounded, grey for dead). If you decide to ignore the battle, it will take place anyway, and the subsequent result will be displayed.

During the later stages of the game, Sauron will inevitably mobilise his forces. If you did not manage to get any friendly forces on your side (by finding objects and presenting them to the appropriate group), you cannot command most of the friendly groups until Sauron starts marching. Only then will all the forces obey your commands. At this point all friendly forces, as well as your opponent's

allies become visible on the map. Then a mad scramble will be necessary to ensure that all your forces are positioned correctly for the forthcoming war. You have to meanwhile ensure that the ringbearer avoids combat or remains heavily protected in order to reach the mountain.

As a degree of randomness has been built into the program, the game never really repeats itself and any sequence of events may not have the same results.

As for the war, the odds are always in Sauron's favour. A few thousand men are no match for tens of thousands of Orcs. Only tactical skill will keep your men alive.

Conclusion

On the whole, this game has been well written, although some aspects of the game (such as searching for objects in the animation level) could become irritating.

War in Middle Earth is more of a strategy type than a true adventure, and the complexity is such that it is unlikely to be completed easily.

Note

The game was run on a computer which has a Transwarp GS installed and as a result, the movement of the characters and screen was relatively smooth. Running the GS at the normal 'Fast' mode caused the screen motion to be rather jerky. Although the game is playable without an accelerator, it performs better with one installed.

The supplied disks are not copy protected, runs using GS/OS V4.0, and starts from the Finder. Considering the amount of disk access it has to perform, significant benefit could be gained by installing the game on a hard disk. The IIGS version req's 768K of memory

John Kishimoto

info

Product : War in Middle Earth
Publisher : Electronic Arts
Available from :
Virgin Mastertronic
(Melbourne House)
2-4 Vernon Yard
Portobello Road
London W11 2DX
Price : £24.99

Value :
Performance :
Documentation :

Finder, EasyDrive and ProSel, a quick comparison.....

Caveat:

I personally am a Finder fan. I intend to make my remarks balanced, but I AM saying this up front.

Background:

I am not a novice. I have had a //gs for a little over a year now, and have gone from the base 256k CPU and a pair of third party 5.25 drives to a full bore 3.25 meg machine with RamKeeper, 62meg SCSI Hard Drive, 2400 baud modem, color printer, and a set of GEN-ewe-ine Apple disk drives. I spend a lot of time (and money) on the on-line services and large numbers of local BBS's through PC Pursuit. I spend a lot of time reading and studying publications and texts about Apple //s.

I recently spent some time setting up ProSel 16 for a friend of mine, who is a novice and simply did not have time to do it himself. While I had owned ProSel 8 for some time, I had never used it as a program launcher. As previously stated, I have a preference for Finder. I was quite familiar with the ProSel utilities, but was put in the position of having to learn the ProSel launching system in a matter of days. Walker Archer of Quality Computers was kind enough to send me a copy of EasyDrive 1.5 for my personal evaluation. (He had no idea I would be writing this, nor did I at the time.) I was already quite familiar with Finder, but I had to come to MAUG for help with ProSel 16, and coincidentally, while I was in the middle of working with this, EasyDrive came in the mail,which leads to the first comparison statement.

I spent about a week bending ProSel to my will. That is, 4-6 hours a day for 5 days and 8-10 hours a day for the last two were spent on making ProSel do what I wanted it to do. What I wanted it to do was not anything that it is not intended to do. I have a fairly complex system, with two HD partitions and a battery backed ROM disk of 1.5 meg containing about a dozen productivity programs, half a dozen utility programs, a couple of telecommunications packages and a number of games (some of which present their OWN problems as far as compatibility with GS/OS etc), which are pretty evenly divided between P8 and P16.

What I wanted to do was to be able to quickly and easily get into ANY of these programs from one main screen, without having to think about what I was doing in the process. Actually, this is my wife's computer, and I wanted to set it up so that she could SEE, from looking at the screen, what to do, without having to wonder, or come and ask me. It took me those seven hard days to do it with ProSel. It took me three hours to do it with EasyDrive.

What's the difference? ProSel is COMPLEX. It offers a LOT more flexibility and power than EasyDrive, but complexity is the price you pay. And by offering you many different ways of doing things, and many opportunities to custom tailor things, it TEMPTS you to do that. EasyDrive is SIMPLE. This is not to say that it is not powerful also, it is, but it is specifically designed to be easy to use and unconfusing to the new user. (In fact, it may be more confusing to the EXPERIENCED user, due to its somewhat unconventional interface, more on that later.)

With both EasyDrive and ProSel, you can let the program do the setting up of the pathnames to launch the programs. EZs EasyAdd and ProSels Automatic Mode will both present you with a list of EXECable programs on a volume and allow you to choose which one you want, and what name you want for it, without your having to understand anything about pathnames or anything else. With EZ, you are able to "add" a menu, and "add" applications onto that menu. Your choices are limited to the name you give each menu, and the name you give the application, and the number of characters allowed is not real large. ProSel allows you to name things whatever you want, but gives you more characters to do it with and allows the use of Mousetext, reverse video, "active" and "inactive" menu entries, etc...And learning how to use all these bells and whistles is what took me so long. ProSel, instead of "menus" has "screens" which serve the same purpose. I ran into some minor but time consuming problems setting up screens also. I will not detail that here, there is no reason to believe YOU will run into the same exact misconceptions I did, but I will say that the documentation provided, while extremely rich in detail, can be somewhat confusing and obtuse on some points. The only point of confusion I ran into on EasyDrive was that the fact that the easiest way to get back to the Main Menu (the Menu of menus, in my setup) is not clearly spelled out in the docs. So I will give it to you here. To get back to the main menu, "add" a menu to whatever menu you are working on and name it "Main".

ProSel, both versions, contains utilities to handle any file activities you might want to do (and many that you won't), a disk optimiser, a bad block fixer, a backup and restore function, and a zillion other (NOT by

actual count) little goodies that SOMEONE (quite possibly you) will find very useful. Easydrive does not contain a bad block fixer, but it does have the optimiser, backup and restore, file activities tools, and a little goodie of it's own called "Status" that tells you the degree to which your disk files are fragmented and makes a recommendation as to whether the disk needs to be optimized. (VERY handy.)

EasyDrive also includes a set of installation scripts that will install MANY of the major programs to your Hard Drive for you. This can be EXTREMELY useful to the new HD owner, especially one who is not sure of himself. (Of course, you have to have the programs in order to install them.) It will also install the operating systems for you, if it is pre-GS/OS. (more on THAT later too)

You will notice that I have not talked about Finder yet. Finder will do anything that ProSel or EasyDrive will do in terms of file activities and program launching. (Efficient program launching under Finder is easy if you know the trick, but that is too involved to fit in this post, so I will be doing another one on that topic.) Finder is AT LEAST as complicated as ProSel in terms of learning how to set it up for most efficient use, and about as easy to use as EZ when you take it out of the box. AND it's pretty. It DOES NOT contain all those useful utilities. But it will run all the utilities from ProSel 8 as stand alone applications, and it will run ProSel 16 or EasyDrive and let you use their built in utilities. Finder is grossly slow in comparison to ProSel and EasyDrive (as this is written, GS/OS 5.0 has been announced, and I have seen a Beta copy, and it is a LOT faster), primarily because it uses the graphical interface and all that screen redrawing takes TIME. Finder has also been accused of being very buggy. This turns out not to be the case. (I had one person, and he knows who he is, tell me that it was IMPOSSIBLE to make ProSel crash...maybe for him, but I can do it, and I did, several times.) Finder has either two bugs, or one bug with two faces, that will cause it to hang up when you try to do something on the desktop after returning from certain non specific applications.

This bug appears rarely, and once you become familiar with it, is only a minor aggravation. It CANNOT, because it happens on the desk top, trash any data or files you may be working with. Many programs have various problems that will cause them to crash for no apparent reason. (Appleworks GS and Paintworks Gold come to mind.) And because they use the same visual interface as the Finder, I believe that Finder is often blamed for these crashes when it shouldn't be.

.. Nuff said.

Conclusions:

All three of these programs are suitable for use with a Hard Drive. They will organize and maintain your files to the limits of your abilities. (The better YOU are, the better THEY are.) ProSel is very much the tool for the power user, (and the power user wanna-be). While it is complex to learn and use properly for the new user, it will almost certainly present the experienced user with a way to do what he wants to do, no matter how bizzare. EasyDrive is the perfect tool for the new user. It is almost self explanatory. Its user interface is a little atypical, but it is very friendly. (atypical = one mouse click is equivalent to a return, a double click is equal to an escape, and escape tabs between menus, while TAB tabs between columns, takes a few minutes to get used to, but the prompts are right there on the screen, and after doing it for 10 minutes it becomes perfectly EZ). This does NOT mean that it is something you will not want to use as you become more proficient. EasyDrive is a powerful program in its own right, and will be right at home in my system for some time to come. Finder is FREE. It comes with the GS. (you all knew that, I know) Finder uses the "standard" Apple interface, and you don't have to learn three or four different sets of conventions (as long as you don't have any Prodos 8 programs). What is not immediately obvious is that Finder is at least as powerful as either of the other programs, and very flexible in it's own right. It is also as difficult to learn how to use WELL as ProSel.

As fond as I am of Finder, and as impressed as I am with ProSel 16, if I had to make a recommendation to a new user with a Hard Drive, I think I would have to say EasyDrive. It will get you up and running all your programs FAST, you will understand it easily, and it will serve you well as you learn more. And you should bear in mind something that I had not mentioned yet. EasyDrive is a pre-GS/OS Prodos 8 program, comparable to Prosel 8. While it is compatible with GS/OS, it does not RUN GS/OS. (yes, you can run all your programs, including Appleworks GS. In fact, AWGS works just FINE under 3.2 for the limited time I tried it. And you can always LAUNCH GS/OS if you need to.) It is fair to say that EasyDrive is a generation behind the two programs I just compared it with. Not to worry, the full 16 bit EasyDrive 2.0 is coming. It will be released sometime between the end of summer and Christmas. There will be a lot of changes, a lot of improvements, or so I am told. And I am assured by Walker Archer that the primary criterion laid out in the name of the program will be adhered to. It will continue to be EASY.

Anon - Found on Compuserve

Build Your Own Vanilla SCSI Tape Backup System

by Dr. Kenneth Buchholz
Box 430 RD#4, Washington NJ 07882

Make Mine Vanilla (Introduction)

Last autumn, I assembled my own "vanilla" SCSI hard drive subsystem using the Seagate ST277N drive, the Tulin AppleHive case, and CMS SCSI Interface Card and saved about $250 by "building my own". Since my first online article on the assembly appeared last year, thousands of others have followed suit and assembled their own SCSI hard drive, and the popularity of these homebrew hard drives is illustrated by the wealth of online and magazine articles which have followed.

During the following months of helping others assemble their own hard drive, giving tutorial presentations before Apple user groups where members would assemble their own hard drive during the presentation, and writing follow-up articles for online services, my own BBS, magazines and newsletters, it became quite apparent to me that what we all needed next was an inexpensive SCSI tape backup system. Acquiring and assembling the hardware was the easiest part - find the software needed to format, backup and restore was the difficult part since Apple, nor anyone else, has released either drivers for a SCSI tape system or tape backup software. Fortunately for me - and you - a friend of mine was willing and able to write the necessary software - HDTAPE - which is now available at a shareware price.

Tim Grams, author of HDFORMAT (the very popular SCSI hard drive formatting software), is the author of HDTAPE. (If you are already familar with HDFORMAT or any of Tim's other software products, you already appreciate the quality of his work!)

HDTAPE is NOT a tape driver; rather, it is a ProDOS-8 application which allows you to format, backup to and restore from tape. As a ProDOS-8 application, the version of HDTAPE described here is specific for the Apple //gs. A GS/OS version as well as a version for the Apple //e are planned, and current owners of HDTAPE will be notified of the availability of significant upgrades. HDTAPE is available by direct order from Tim, and ordering information follows this article.

If you're a SCSI hard drive owner who has quickly tired of backing up your drive to floppy disk, read on: I will lead you through the purchase of the hardware, its assembly and use. And before you say "I can't build anything" let me say that if you can use a screwdriver, you CAN build your own SCSI tape backup system - its THAT easy! Why A Duck? (Why a SCSI Tape Backup System?) Do you find yourself asking, "Why should I invest in a tape backup system when 3.5" disks will do?" There are three reasons which come to mind instantly:

(1) Using 3.5" disks, you must remain glued to the chair in front of your system, swapping disks - lots of disks - and for a 32 meg volume this can take well over one hour. Using a tape system, you start it up, wander off and do other things while the system is backing itself up, and return when its done.

(2) The tape system I'll describe here uses DC2000 tapes, each of which holds 40 megs, equivalent to 50 3.5" disks. Since the DC2000 tapes (which are also used in many of the MS-DOS systems and are therefore readily available) can be purchased for as low as $15 each, tape backup is more economical than disk backup.

(3) And finally, since the DC2000 tape is roughly the size of an audio cassette, it requires a lot less storage space than do 50 3.5" disks.

Lincoln Logs (The Hardware)

The hardware needed for this project is listed below. I provide information on vendors and approximate prices (based on what I paid in March 1989) at the end of this article.

1 - 3M brand MCD-40 DM/SCSI tape unit

1 - Tulin AppleHive case with 30 watt power supply & fan; includes all internal cabling; the optional open face plate is highly recommended

1 - Apple SCSI Interface Card (ROM version C)

1 - SCSI Interface Cable terminating in a DB-25 pin connector on one end and Centronics-like 50-pin connector on the other end

1 - Standard Power Cord (as used on the Apple // line)

1 - DC2000 40 meg (250') SCSI tape cartridge

1 - HDTAPE (Formatting, Backup & Restore Software)

(The Assembly)

For the initial assembly and connection, I'm going to provide directions assuming that your SCSI tape backup system will be operating on a seperate Apple SCSI Interface card from your hard drive.

Operation on the same SCSI chain (i.e., Interface Card) as your hard drive requires a few extra steps, which will also be explained.

1. If your tape unit arrived with the attachment brackets already installed, skip down to Step 3.

2. Attach the brackets to either side of the tape unit using the 4 screws supplied. When facing the tape unit's front panel, the tape ejection button should be below the tape insertion opening.

3. If you purchased the optional open face plate from Tulin, skip to Step 4; if not, you will need to cut a hole in the face plate: Using a sabre saw with sheet metal blade, cut a rectangular hole in the AppleHive face plate measuring 4.25" wide and 1.5" high. The lower left corner of this hole should be 1" from the left edge and 0.25" up from the bottom of the face plate (on the bottom half of the face plate when facing the AppleHive). When cutting this hole, be sure to make the cut far away from the tape unit itself - preferrably in another room - to keep metal shavings from coming in contact with the drive and case. Use a metal file to round the cut edges smooth.

4. With one hand, hold the tape unit so that its underside is facing UP. (The tape's eject button is on the bottom front of the unit.) With your other hand, grab the distal end of the flat, 50-wire ribbon cable coming from the connectors on the back plate of the case and extend the cable so that it is NOT twisted. Insert the connector at the end of this cable into the 50-pin connector at the back of the tape unit. Be careful to insert this connector properly so that no pins are bent, broken or sticking out. When you press the connector into the back of the tape unit, the latches on either side of the tape unit's connector should lock the cable in place. Once this connection has been secured, rotate the tape unit so that it is right side UP, resulting in the 50-pin cable having a 180 degree twist in it.

5. Connect the 4-prong power line connector from the power supply unit in the case to the tape unit. Note that this power connector is D-shaped, and can only be inserted into the tape unit's power plug receptor one way (the correct way!).

6. Gently set the tape unit onto the base plate of the case. Hold securely to the case base plate and turn the entire assembly upside down while

continuing to hold the tape unit firmly against the base plate. Using the 4 flathead screws provided with the case, secure the tape unit to the bottom plate by inserting the screws through the holes in the bottom plate and into the bottom of the brackets on either side of the tape unit. Tighten securely. Turn the assembly right side UP.

7. Check that the settings of the DIP switch bank (on left side of drive when facing drive from the front) are properly set (Dips1-6 should be towards the bottom of the drive, 7-8 towards the top of the drive). The SCSI ID of the tape unit should be LOWER than that of your SCSI hard drive; setting the tape unit ID to 0 is a safe bet since most commercial hard drives are shipped with SCSI ID = 6.

8. Install the case cover and face plate, and fasten securely using the screws supplied. Attach the power cord and SCSI interface cable to the connectors on the back of the case, but do not yet plug the power cable into a wall outlet.

9. Install the Apple SCSI Interface Card into your Apple as per the manufacturer's directions.

10. Attach the SCSI Interface Cable from the tape unit to the Apple SCSI connector on the back of your computer.

11. Plug the tape power cord into a wall socket and turn the tape unit ON.

12. Turn your computer and hard drive ON, and boot the HDTAPE disk. Follow the instructions below for using HDTAPE.

Solo Flight (Using The Tape System On A Single SCSI Chain)

If you will be chaining your tape backup system off your existing SCSI hard drive, you will need to (1) make sure that the SCSI tape backup system is the last device in the chain and (2) remove the terminator packs from the hard drive.

To remove the terminators from your hard drive, open your hard drive case and remove the hard drive unit itself. Locate the terminator packs (usually 2-3 small, thin yellow units which vaguely resemble caterpillars on the underside (circuit board) of the hard drive) by gently pulling them off. Be careful not to bend or break any of their pins.

Also note how they are attached to the drive (which side is "up") so that you can properly reinsert them at a later date if necessary.

If you remove all terminators for all drives, including the tape drive, you can chain or remove drives at will, providing you attach an Apple SCSI Terminator to the daisy chain port of the last drive on the chain. This will require that you purchase an Apple SCSI Terminator at additional cost. After reassembling your hard drive, connect the SCSI Interface Cable from your tape backup system to one of the connectors on the back of your SCSI hard drive. You are now ready to boot HDTAPE and begin your backup.

Its Soft Where? (Using HDTAPE)

With your computer, hard drive and tape backup systems ON, boot the HDTAPE disk. After the program boots and the credits screen is displayed (indicating the version of HDTAPE you're using), HDTAPE checks for the presence of an Apple SCSI Interface Card and tape drive, and then instructs you to insert a tape. When you receive this instruction, insert a brand new, unformatted tape.

Your tape drive will perform about 30 seconds worth of tape access. During this time, it is checking the tape. It will determine that the tape needs to be formatted and will issue a message indicating this. When you see the menu line

0=Backup 1=Restore 2=Format
3=Diagnostics Q=Quit

select 2 to format the new tape. Formatting takes approximately 38-40 minutes, so go grab an iced tea and watch a rerun of Taxi.

When Taxi is over, so is your formatting of the tape. The menu line is again displayed and you're all set to begin backing up your hard drive. Fortunately you will only format each tape you use once and never again, so you may want to take the time to format all your tapes now and get that out of the way for good.

HDTAPE is a ProDOS-8 application using the old Slot and Drive designations for the volume to backup. To backup a volume, select 0 from the menu line. HDTAPE responds with questions on which Slot and then which Drive you wish to backup. If you have a 60 meg hard drive attached to slot 6 and wish to backup the first volume, select Slot 6 Drive 1; to backup the second volume in that hard drive, select Slot 6 Drive 2.

Three hexidecimal numbers are displayed during the backup process: the total number of ProDOS blocks that will be backed up, the number of blocks read from the volume, and the number of blocks written to the tape. The number of blocks written to the tape will eventually go higher than the number of blocks read from the volume being backed up due to buffering and differences in the block sizes of the two devices (hard drive and tape drive); this is of no importance to the backup process itself, so don't be alarmed! In general, each megabyte being backed up takes about 2-2.5 minutes, so estimate how long the entire backup process will take based upon the size of the volume being backed up, and go have some fun while the backup occurs. Note that if you wish to cancel a backup or restoration, you can press ESCAPE to return to HDTAPE's main menu - but beware that the tape (if backing up) or hard drive (if restoring) will contain incomplete data. When the backup is done, select Q from the menu line and HDTAPE will rewind the tape for quick mounting the next time that tape is used. After rewinding, HDTAPE will ask you if you wish to either quit the program or process another tape.

Restoring a backup from tape is just as easy as backing up to tape. Select 1 from the menu line to restore, and tell HDTAPE which Slot and Drive you wish to restore to - the rest is automatic. And yes, it is THAT easy!

Slurpies (Potential Problems)

There are a variety of cases that can be used instead of the Tulin Apple-Hive. If you purchase a case with an "open" front plate, you will not need to cut a rectangular hole in the front as

we did with the Tulin AppleHive case; the "open" front plate cases already have that opening. The one problem that can crop up with any case/power supply/fan combination you choose is magnetism. Unlike hard drives, tape drive units are open and not as well protected as hard drives are from magnetic fields, dust and other data goblins. Many of the power supplies and fans in popular hard drive cases emit enough magnetism to interfer with the operation of the tape unit. If you find that your tape unit does not operate properly, try removing the case covering and carefully try using the system opened. If the tape unit works under these conditions, chances are that enough magnetism is being created when you close up the case to interfer with the tape unit's performance. If this is true, try this home remedy: cut a piece of cardboard box to make a "lid with sides" which can stand over the tape drive and along either side of the tape drive for its length. (I used part of the tape drive shipping box, which was the perfect size.) This "lid with sides" should fit so that there is sufficient space between it and all components of the tape drive itself. Completely encase this cover with aluminum kitchen foil, taping all edges so that the foil edges can not unravel and touch any of the tape drive components. Set this aluminum-covered cardboard lid over the tape drive so that is surrounds the tape drive and provides a physical barrier between the tape drive and the power supply and fan. You may also want to place a sheet of plastic film between the bottom of the tape unit and the case (I used a plastic page protector trimmed to the size of the tape unit's footprint). Also check that all cable connections are secure. Another problem which ocassionally occurs is a bad tape. Just like disks, you can ocassionally receive a bad tape. If your tape unit seems to function properly but you receive an error during the format process, try another new tape or two - you may simply have a bad tape (or two if its your unlucky day). Finally, note that tapes can wear out after prolonged use. To help extend the life of your tapes, always store them in a clean, out-of-the-way place away from magnetic fields.

"I Love You" & Other Lies (Warranties & Promises)

One of the major concerns for all do-it-yourself projects is the warranty. One of the first questions posed to me when I built my vanilla SCSI hard drive is, "What about a warranty?" If you purchase a new drive, you should receive the manufacturer's warranty - which usually runs about one year. This is the same as is usually given on commercially-assembled tape backup systems. Check with the vendor of the case/power supply on their warranty; Tulin offers a 6-month warranty on the AppleHive case.Apple offers their standard, chintzy 90-day warranty on the SCSI Interface Card. In general, with the possible exception of a shorter warranty on the case & power supply, the warranty on the tape unit itself and the Apple SCSI Interface Card are the same as if you purchased a commercial tape backup system. The big difference in assembling your own system, of course, is price.

The Bottom Line (Price)

I purchase my brand new 3M tape unit for $299. The Tulin AppleHive case with 30 watt power supply is $119. The Apple SCSI Interface Card can be purchased mail order for about $100, the SCSI Interface Cable and power cord together will cost you another $30 or so, and HDTAPE $50. The bottom line comes to around $600, excluding tapes. (If you already have a SCSI hard drive with Apple SCSI Interface Card, your tape backup system can run less than $500 complete.) Scouring the local computer faires and Computer Shopper, you might be able to save $50 on a case with power supply, and if you make your own SCSI Interface Cable, you can save another $20 or so. Considering that Apple sells their similar SCSI Tape Backup System for the Mac, sans Apple SCSI Interface Card, for $1499 list, $600 doesn't seem that expensive to begin with! If you are considering assembling your own hard drive AND tape unit simultaneously, you can save a few dollars by using the Tulin AppleHive case since this case will hold both one half-height hard drive and the 3M tape unit. But since the AppleHive comes in two flavours - with a 30 watts power supply or with a 60 watts power supply - which do you select? The Seagate ST277N 60 meg SCSI hard drive draws a maximum of approximately 12.5 watts (when accessing the drive) and the 3M tape unit draws a maxdmum of 20 watts when moving the tape (but only 9 watts when in standby mode). Since the two devices are accessed alternately, it appears that the 30 watts power supply is sufficient to power both devices. Tim is using the 30 watts version to power both his Seagate ST277N 60 meg drive and 3M tape unit and reports no problems thus far (I have my vanilla tape system in a seperate case since I move it between two Apple //gs units), but we both suggest that the 60 watts AppleHive be considered just to be safe.

The Cast Of Players (The Vendors)

HardTimes (1070 Commercial St. San Jose CA 95112; 408-452-5700) sells the 3M tape units for $299, while their supply lasts.

Tulin Corp. (2393 Qume Dr., San Jose CA 95131; 408-432-9025) sells the 30 watts AppleHive for $119 and a 60 watts AppleHive for $169, power cords for $4, $20 for the SCSI Interface Cable.

Mytech Electronics (300 Breesport, San Antonio TX 78216 800-527-7435) is a good source for cables & other electronic components (including all you will need to make your own SCSI Interface Cable).

Diskette Connection (272 Quigley Blvd., New Castle DE 19720; 800-451-1849; & other locations around the US) is an excellent source of 3M DC2000 tapes for $15 each. Quick reliable service & best prices!

Tim Grams (P.O. Box 462283, Garland TX 75046) provides HDTAPE for $50. When ordering, specify HDTAPE, computer type being used, and 3.5 or 5.25 disk. Checks or money orders (made payable to Tim) are accepted.

The Free Clinic (Sources of Information & Help)

The Washington Towne Crier BBS (1-201-689-3649; 8-N-1; 300/1200/2400 bauds) is a free, public-access BBS specializing in the Apple // family of computers. WTC has extensive libraries of public domain and shareware SCSI utility software and information files. The author can also be reached at WTC via private EasyMail (user #1) or the public forums.

Kenneth Buchholz

Reach Out & Touch Someone (Contacting the Author)

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Apple II GS/OS

Transcript of the "Apple II GS/OS 5.0" Event Apple Auditorium, AppleLink Personal Edition, Tuesday, May 16, 10 p.m. EST Host: Cheryl Kempton Guests: Brian Loucks, Jim Mensch and AFL TracyP

AppleLink	Good Evening and welcome to another event in the Apple Auditorium that introduces you to the people behind the products. Tonight we're pleased to welcome Brian Loucks and Jim Mensch, of the Apple II Product Management team, ready to discuss the new Apple IIGS/OS 5.0, recently introduced at AppleFest. Also with us tonight is AFL TracyP, Tracy Poe, Forum Leader of the Apple II Hardware Forum, and David Sugar, (AFL Dyfet), leader of the Apple II Development Forum. The Apple (@) Auditorium is one of four areas for "big-name" events on AppleLink. The large capacity room allows you to attend the festivities with hundreds of other AppleLink members. Your host tonight is Cheryl Kempton, (CherylK5), special projects coordinator for the Apple Community.
CherylK5	Good Evening and welcome again to the Apple Auditorium. Tonight we have with us Brian, Jim and Tracy to tell you a little more about their specialties. Before we start with questions, Brian would you like to introduce yourself and tell us a little about what you do at Apple?
Loucks	OK, I'm a product manager in CPU product marketing. I've also been helping roll out SSW 5.0 for the GS.
CherylK5	Thanks Brian. We have a question from from Tim
Question	I was VERY impressed with 5.0 at Afest, however does this reflect on the quality of the original code used in 4.0? ::ducking::
JimMensch	The system disk 5.0 code is much faster for many reasons. First, and foremost is memory considerations... system disk 4.0 is aimed at users who have 512K of RAM primarily so everything had to work well in 512K. In 5.0 we decided that enough people had more memory so we started taking more advantage of it. This means that if you have a 1 meg system you will get a pretty nice performance increase but if you have 512K many of the speed improvements will not be loaded on your machine.
AFL TracyP	Jim, does that mean that a user with less than 512K won't get the performance advantages of 5.0?
JimMensch	Tracy, that does mean that a 512k user will get less of an increase. But, 512K users will still see better performance
CherylK5	Jim, maybe you can take this question from A Gibber F on SCSI drivers...
Question	Well I would like to congratulate you on a super job with 5.0.... My question is about the SCSI drivers... What was implemented differently in 5.0 vs 4.0?
JimMensch	OK. The main difference is 4.0 and 5.0 for SCSI is everything! In 4.0 we had what was an interim SCSI manager. It was not the whole design as our group saw it. For 5.0 we wrote a whole new SCSI manager that did not use the cards firmware at all, and was much more effective. The net effect of the rewrite was the 5 times speed increase seen at Applefest
CherylK5	Tim has another question for Brian
Question	Is Apple still committed to John Sculley's 12-18 month CPU committment given at Afest-SF last fall? That would place a CPU release at either Sept or May next year and we assume it's not a //c++
Loucks	Sorry.... We can't comment on unannounced products... we may or may not be working on. Sorry again.
AFL TracyP	The boss can get away with it...lesser mortals can't!
CherylK5	And BradleyL1 has a different question for Jim...
Question	How true are the Rumors that GSOS makes the GS have the speed of MAC + and how is this possible given the differences in CPU speed and Data bus ?
JimMensch	Bradley, the rumors you have heard well, lets take it from the top. First, assuming the Mac+ were faster than an Apple IIgs then 5.0 would not speed the hardware up But, that is a pretty big assumption. The Mac+ and Apple IIgs have completely different processors. And, they work in very different ways. The Mac plus hardware is faster at moving bytes from here to there and faster at general calculations. However, the GS is very good at special purpose coding. By this I mean that as an example, the Mac plus may be able to multiply two numbers faster than

	the GS but in specific I can multiply any integer by $A0 on the GS faster. Since this is the case, when we wrote 5.0 software we took advantage of many places where the gs could run very fast and used them. What you get is a GS that runs more efficiently, and yes, can perform some base operations faster than the Mac +. However, since Apple does not write every Application, and since not all routines can be sped up the way quickdraw and the SCSI manager were, the Mac plus probably still has us beat overall. But, you should know that with 5.0 you aren't much off the mark in most graphic operations...
AFL TracyP	The rumors you heard were probably extensions of comments made at AppleFest by individuals who had seen demonstrations of System 5.0 with a TransWarp GS and Ohio Kache's Multi-Kache card installed...the (unsubstantiated) word is that it =looks= as fast as a Mac II.
CherylK5	And now a question from WaltNelson on the manuals...
Question	How will 5.0 be distributed? And will it have a new manual? Will I want the new manual?
Loucks	It will ship as a System Software update, just like 4.0.... You'll also probably be able to get it through user groups... and online services. There is a new manual...Depends on how useful you find our SW documentation....Many benefits are transparent... But there are new features that require the manual.
CherylK5	And Robin Lynn wants to know.
Question	Does this mean it takes even longer to load?
JimMensch	Nope Takes on average about the same time as 4.0, sometimes faster,sometimes slower but that depends on how much extra stuff you install.
CherylK5	And another from Walt on TWGS vs the Finder
Question	5.0 with a Transwarp GS compares favorably with the Finder on a Mac II. True?
JimMensch	Walt, at some point the finder stops running and just sits and waits for you to do whatever comes next. I think that you can safely say that in most cases the Mac II and 5.0 with a transwarp will be waiting for you...
AFL TracyP	Good practical answer, Jim.....
CherylK5	Walt's got quite a few this evening, this one is on Genesis
Question	Have you seen the demo of the programming aid from Genesis software that creates Menu,Buttons, etc? Any comments?
AFL TracyP	No one here has seen the demo...but I have listened to the pitch...it sounds like an intriguing product. It supposedly won't ship for several more months..
CherylK5	Thanks Tracy... and this question is for Jim from AFL TimB
Question	I hope 5.0 is using the rev C SCSI card, right Jim?
JimMensch	In fact, it requires it I believe. But, in any case, the firmware is not used so the firmware rev isn't very important any more.
CherylK5	And PElseth has a question on the Resource Manager
Question	Re the resource manager...what happens when the IIGS resource manager meets a Mac (HFS) file with resources? Does it recognize the Mac resource fork as an untouchable?
JimMensch	The IIgs resource manager will not harm Mac resources but, it will not load them either. sorry.
CherylK5	Max Genius has a question on access time for Jim...
Question	In system 5.0 will we see an increase in floppy disk access time? I mean past the 1 Mhz. limit?
JimMensch	Well, past 1Mhz what I would ask normally.. but system 5.0 floppy driver was rewritten to run faster, and the driver is now multi block aware, so instead of waiting for the next sequential block, if it sees a block that the app wants it will load it. thus, much faster loading times...
CherylK5	Jim, here's another question for you on the FST.
Question	Will there be a new FST that will take advantage of volumes larger than 32 meg... or will we be stuck with old ProDOS
JimMensch	Well, "OldProdos" is stuck with 32 meg volumes as a max it wouldn't be ProDOS if it didn't... but GS/OS can support huge volumes and as an example the Appleshare FST can support up to 360 meg (at least thats the biggest I have seen So, with new file formats will come larger volume sizes but with ProDOS we will always have 32 meg.
CherylK5	And now, on to the next question from Pennywels...
Question	How much will 5.0 speed up my 3.5 disk drives?
SEGlass	5.0 will speed up your 3.5 drive by a factor of about two if your applications are written to read large chunks of data at one time. The finder works this way as does the operating system when it reads applications into memory. This makes them load faster. When it comes to writing to disk, the performance is about the same.
AFL TracyP	You're still essentially doing disk I/o at 1 MHz, but using tricks to make the apparent transfer speed a bit quicker.
SEGlass	There aren't any tricks. The transfer speed is faster.
AFL TracyP	Bad choice of words, perhaps....the Multi-Kache card still gets info off the disk at 1MHz... the info is read into the computer from the cache at a higher speed, causing the apparent quickness.... this is just another technique.
Question	Will software that needed 1.25 Megs under 4.0 need more with 5.0
SEGlass	If your software really used all the memory in a 1.25 meg system,it might run into trouble with 5.0. We did not make improvements without taking up a little more memory. But on the most part, the applications we have tested seem to work all right.
JimMensch	Some even better
CherylK5	Jim, can you answer this question from PElseth...
Question	Why is it that "fastfont" is a specific case? I.e., why aren't all font's preshifted automatically when first loaded?
JimMensch	Well, mainly because fastfonts are memory pigs the fastfont we have put on the system disk is 4 times larger than its standard counterpart But, the design of the fastfont code is such that other fonts "COULD" be made fast its just that if we start doing them all the system starts to loose memory very quickly. Also, generat-

	ing the fastfont takes too long right now to do every time the font is loaded and saving em all on disk would require another 2 meg for your boot disk !
CherylK5	And here's a question from Wrist that's been asked a lot lately, Steve,your comments...
Question	MacWeek had a story that said the II hardware group had been disbanded. Can Apple comment on that?
SEGlass	Lots of rumors have been flying lately about Apple's support of the Apple II. This is just another one of them and none seem to have any fact behind them. Look at all the talk about us abandoning the II and what do we do? come out with system software 5.0. And while no one here can say what we'll do next you can all bet that we have not stopped working. In fact, we are working harder now than at any other time I can remember in my seven and one half years at apple (all with the apple II and apple III groups).
AFL TracyP	This Apple II user does =not= rely on MacWeek for info!!!
Question	Is Icon drawing (using the toolbox routines) and copying pixels from GrafPort to GrafPort speeded up in 5.0?
JimMensch	Sure, I can take that one...Yes, pixel transfer operations were speeded somewhat in 5.0. Here is a trick yopu can use by the way,... If you be sure all your icons are aligned to a byte boundary they will be draw quite a bit faster
CherylK5	And Electmusic has this question about special applications...
Question	Will special application programs (like Music programs- sequencers) written with GSOS 4.0, be compatable with 5.0
JimMensch	Should be
SEGlass	Cannot see any reason why not.
JimMensch	we have tested 5.0 with many applications and have gone to great lengths to be sure that the changes we have made are compatible
CherylK5	Jim Laz has another question...
Question	Will the new tools and maybe parts of the operating system be put into a ROM upgrade in the near future?
Loucks	Can't really talk about any ROM upgrades... Sorry.
CherylK5	I'd like to thank Brian, Jim, Steve and Tracy for being here. Unfortunately, I have to leave for now so Tracy will be your host. Goodnite!
AFL TracyP	Good night Cheryl!! Thanks for getting us started! Walt Nelson has the next question...
Question	How much larger will the system files be? Do I need a hard drive now?
SEGlass	The system still works with floppies...But if you have the opportunity, a hard disk is a great investment. the system performs much better with one. You'll feel that you... have a new machine with a lot more power.
Question	We and third party developers should view system 5.0 as a sign that Apple is serious about supporting the Apple II line. Correct?
SEGlass	You better believe it!
AFL TracyP	BradleyL is concerned about SCSI compatibility...
Question	Will System 5.0 work with a CMS interface card or will I have to get an Apple SCSI card ?
SEGlass	I don't know of any problems with CMS drives.
JimMensch	Your CMS drive should work fine. you might want to contact CMS and see if they have a GS/OS driver
Question	If I Install 5.0 on My 4.0 Programs, Does That Mean I'll See Faster Program Execution?
JimMensch	If they spend a lot of time calling the toolbox, then they will be somewhat faster
SEGlass	You'll see a number of things go faster by installing 5.0 on your older applications. For example, as Jim points out, the toolbox is faster and any toolbox calls that the old applications make will run faster. Also the OS is much faster which should make the applications load and access data faster. This is especially true if you have a SCSI hard disk. So all in all it is a good idea to upgrade the system on your old software, but make sure you do it on a copy, not the original. You'll always want to be able to go back to the original just in case.
Loucks	Many graphics based GS apps are much more RESPONSIVE under 5.0.
Comment	More of comment, but... It seems to be the history of the Apple II to do the most with the hardware that's available via software... Congrats to the IIgs software team!
SEGlass	Thank you. We hope you like it.
Question	I'm curious as to why the menu help feature was removed from Finder 1.3? Was this a memory or user interface decision? *Continued on Page 37*

Using the Glanmire MicroWatch

Jeremy Quinn tells us how to use this device with ProDOS and the Zip chip

The Problem

I have been using a Glanmire Micro Watch for years now and find it very reliable, but I especially like the fact that it does'nt use a precious slot in my Apple|le. The price you have to pay for this "economy" is that it is normally unrecognized by ProDOS.

This problem is quite well documented, in Dec 88 Apple 2000 Dave Ward discusses it in some detail. In "Out of the Glanmire" he provides a "once only" patch for ProDOS V1.4. His technique is to patch ProDOS directly on disk. Unfortunately each version of ProDOS is going to look slightly different on disk, so each time a new version comes out you have to go searching for where to place the patches, not a trivial task.

The Solution

A solution to this problem is to patch Prodos once it is in memory and "running", ie. after executing ProDos when all of its modules have been relocated to their runtime locations. Now it is possible to locate the position for your patches by looking up their locations in the ProDos Global Page.

The location of interest is DATETIME $BF06. This is a 3 byte vector to where ProDos can find your clock driver. Prodos JSR's to this location each time it needs to read your clock. The first byte should contain a JMP instruction ($4C), the next two bytes contain the default clock driver address. If at bootup, a Thunder Clock or other ProDos "compatible" clock card was not found the first byte contains an RTS ($60).

So what is now required is a program that will:-

0. Read locations $BF07 and $BF08 to ascertain where to move your clock code to.
1. Move the code to the correct location.
2. Place a JMP instruction in $BF06.
3. Update MACID $BF98, the Machine ID byte in Prodos Global Page that lets prodos know a compatible clock exists.

The problem with this method is that Prodos has to be patched each and every time it is booted. Some way has to be found to automatically run your clock patch code right after Prodos. The most obvious method would be to make your Clock Patcher a system file, give it's name the .SYSTEM postfix and make it the first system file in your directory. I personally don't find this acceptable as it stops me running any other .SYSTEM file automatically like Prosel.System or Appleworks or something.

So here are two solutions. One seems best for hard disk users the other for floppy disk users.

I will show the "Floppy Disk" method first, it was presented to me by Terry Cymbalisty. There is an undocumented feature of later versions of Prodos (versions 1.4 and later I think) in that ProDos searches for and executes a file called ATINIT type $E2, before carrying on as usual ie. executing the first system file it finds. The original purpose of this was to set up an Apple Talk interface, so if you use one of those, this method is not for you.

Terry's source code is in Listing 1. It is in Merlin Assembler format.

The Clock Driver will work up until 1992, after which you will have to change the YEARS table, see Apple 2000 Dec'88.

This is basically what it does:-

0. Fetch the DATETIME $BF00 vector, place in Zero Page.
1. Write enable the language card (this is where the code goes).
2. Store the length of the actual clock driver. For the Move routine.
3. Move the clock driver using indirect indexed addressing (hence the need to put DATETIME in Zero Page).
4. Patch the clock driver so it works at its new location.
5. Reset language card bank 2 and read Rom.
6. Store a JMP instruction at DATETIME $BF06.
7. Set bit 0 of the MACHID $BF98 byte to 1, so ProDos knows a compatible clock is installed.
8. Load and execute the file ZIPCFG. Ring Bell if not found. This configures your ZipChip. (What! You don't have one?)
9. Exit via an RTS instruction.

Pros of this method

If you run programs from floppies, and consequentially reboot all the time, you want to keep the space used by such configuration routines on disk to a minimum.

Its fast.

Cons of this method

If you have other configuration routines to run at bootup (like ZIPCFG), you have to re-write and assemble your ATINIT file.

Won't work with Apple Talk.

The "Hard Disk" method of executing Initialization files automatically on bootup is to use a program called SETUP.SYSTEM, by Sean Nolan. Described in Call Apple Nov'87 page 14. With further comment useful to our GS comrades in Call Apple Feb'88 page 29.

To use this program you must:-

0. Place Setup.System in your Root directory as the first .SYSTEM file.
1. Create a Subdirectory called SETUPS in your Root directory.
2. Copy into SETUPS all the configuration programs you need to be executed automatically. Only types SYS and BIN are executed.
3. Place the application you want to run after setting up as the next .SYSTEM file after Setup.System.
4. Boot Prodos.

Notes on configuration programs executed by Setup.System.

Type BIN files can execute between $200-$3EF or $800-$B8FF. They should exit with an RTS.

Type SYS files can execute between $2000 and $B8FF. They should exit with a ProDos MLI Quit call.

Do not try to use Basic.System in SETUPS.

Use for things like RamDisk Drivers, Clock Drivers, ZipChip Configuration, Prodos8 CDA's on the GS etc.

Pros of this method

It is easy to add new or remove old configuration programs as they can all be separate files in your SETUPS sub.

Cons of this method

It takes up more room on the disk as you have more short files, each taking up space on disk they may not use, along with SETUP.SYSTEM and the sub SETUPS.

Can be a bit slower on a Floppy or a badly fragmented Hard disk.

The source code for my version of the Glanmire clock driver is in Listing 2. It is in Edasm Format.

The main differences between my code and Terry's are:-

0. Our Clock Drivers are completely different! My code is totally relocatable, so it does'nt need patching to work in a new location by the mover

code.

1. My Clock Driver does'nt do Year calculation so it needs patching every year. As I use a Hard Disk and only use one copy of the clock driver, this is not a great hardship for me. But it could be a real pain if you have it on lots of disks.
2. My code does'nt execute ZIPCFG. Just include the file ZIPCFG in your SETUPS subdirectory if you need it.

Zip Chip stuff

If you use a Zip Chip and the Glanmire Micro Watch, you will have found that a normal Glanmire clock driver does'nt work at high speed. It seems the clock hardware can't cope. The trick is to switch off the Zip Chip before reading the clock hardware then switch it on again afterwards. In the Zip Chip "manual" there is some demonstration code for doing this, but as it amounts to loads of bytes of to do it I was finding it difficult to squeeze my clock driver into the 129 byte limit allowed. So Yvan Zaneboni and I came up with a method of temporarily slowing down the Chip. In order to read the Game Paddles normally ie. to come up with a number from 0-255 instead of total garbage (0-1024 it would overflow anyway). The Zip Chip has a configuration option to slow down for Paddle reads. Anyway it transpires that if you Reset the Paddles (STA $C070) the Zip Chip thinks you are about to read them. Why else STA $C070? And as long as you have the chip Configured to slow down then, slow down it does for 5 milliseconds, quite long enough to read the clock. The setting or presence of paddles does not effect this trick.

If you use a Non Aux slot Ram Card like Plus Ram etc., then it is worth configuring that slot to Fast Speed for the Zip Chip. You get a noticeable speedup for a RamDisk or Cache using the card. That's why Terry and I are so keen to run ZIPCFG all the time!

I have sent mine and Terry's clock drivers also SETUP.SYSTEM to Apple 2000 library, so they should be available from there.

Jeremy Quinn

Listing 1

```
*********************************
*                               *
*          Read.Clock           *
*                               *
*********************************

AN0OFF    EQU   $C058     ; Anunciator 0 Off
AN0ON     EQU   $C059     ; Anunciator 0 On
AN1OFF    EQU   $C05A     ; Anunciator 1 Off
AN1ON     EQU   $C05B     ; Anunciator 1 On
AN2ON     EQU   $C05D     ; Anunciator 2 On
BUTTN2    EQU   $C063     ; Paddle Button 2
BANK1     EQU   $C089     ; Write enable $D000
                            Bank 1
BANK2     EQU   $C081     ; Set $D000 Bank 2
BELL      EQU   $FF3A     ; Monitor BELL Routine
PDATE     EQU   $BF07     ; ProDOS DATETIME Vector
DATE      EQU   $BF90     ; ProDOS DATE Store
TIME      EQU   $BF92     ; ProDOS TIME Store
MACHID    EQU   $BF98     ; Machine ID Byte

          ORG   $2000

          DSK   ATINIT
          TYP   $E2

START     JSR   SETUP     ; Set up Vectors.

GO        CLD             ; Required by ProDOS.
          LDA   AN2ON     ; Set Read Mode.
          LDA   AN0OFF
          LDA   AN1ON
          LDA   AN1OFF    ; Set Shift Mode.
          JSR   READ      ; Get secs & throw away.
          JSR   READ      ; Get mins
          STA   TIME      ; and store.
          JSR   READ      ; Get hours
          STA   TIME+1    ; and store.
          JSR   READ      ; Now muck about with
          STA   $3C       ; the date.
          JSR   READ
          TYA
          STA   $3B
          STA   $3A
          LDA   #$0F
          AND   $3B
          STA   $3B
          LDA   #$F0
          AND   $3A
          LSR
          ROR
          ROR
          ROR
          STA   $3A
          TAY
          LSR
          ROR
          ROR
          ROR
          ORA   $3C
          STA   DATE
          PHP             ; Work out the year.
          AND   #$1F
P1        ADC   MONTHLEN-1,Y
          BCC   LAB0
          ADC   #$03
LAB0      SEC
MOD7      SBC   #$07
          BCS   MOD7
          ADC   #$07
          SBC   $3B
          BCS   LAB1
          ADC   #$07
LAB1      TAY
P2        LDA   YEARS,Y
          PLP
          ROL
          STA   DATE+1
          RTS             ; Back to ProDOS

READ      LDA   $C070     ; Delay before reading
                            PDL
          LDX   #$08      ; Routine to pulse data
          LDA   #$00      ; out of the clock.
          STA   $3A
LOOP1     LSR   $3A
          LDA   BUTTN2
          AND   #$80
          CLC
          ADC   $3A
          STA   $3A
          STA   AN0ON
          STA   AN0OFF
          DEX
          BNE   LOOP1
          CMP   #$00
          BEQ   OUT
          TAY
          SED
          SEC
          LDX   #$00
LOOP2     INX
          SBC   #$01
          BNE   LOOP2
OUT       TXA
          CLD
          RTS

MONTHLEN  DFB   $00,$1F,$3B,$5A,$78,$97
          DFB   $B5,$D3,$F2,$14,$33,$51
YEARS     DFB   90,89,88,88,92,92,91

END       DFB   0
```

```
*******************************************
*                                         *
* Relocate Clock driver into space used by *
* Thunderclock                            *
*                                         *
*******************************************

SETUP    LDA   PDATE     ; Move vector to zero
                           page
         STA   $06
         LDA   PDATE+1
         STA   $07
         LDA   BANK1     ; Write enable Language
                           card
         LDA   BANK1     ; bank 1
         LDY   #END-GO   ; Put length of driver
                           in Y
MOVECD   LDA   GO,Y      ; Get driver byte
         STA   ($06),Y   ; Put in ProDOS clock
                           space
         DEY
         CPY   #$FF      ; Moved everything?
         BNE   MOVECD    ; If not, get more.

         CLC             ; Patch address of READ
         LDA   $06       ; into routine
         ADC   #READ-GO
         STA   STORE     ; Save offset
         LDA   $07       ; and add it to address
         ADC   #$00      ; of START2
         STA   STORE+1

         LDX   #$05      ; 5 Patches to be made
         LDY   #$0D      ; Start looking at byte
                           14
LOOP3    INY
         LDA   GO,Y      ; Get byte of routine
         CMP   #<READ    ; Does it match low byte
         BNE   LOOP3     ; of READ's address?
         JSR   PATCH     ; If so do a patch
         DEX             ; One less to do
         BNE   LOOP3     ; If not finished do
                           next

         CLC             ; Patch address of
                           MONTHLEN
         LDA   $06       ; into routine.
         ADC   #MONTHLEN-GO-1
         STA   STORE
         LDA   $07
         ADC   #$00
         STA   STORE+1
         LDY   MONPATCH
         JSR   PATCH

         CLC             ; Patch address of YEARS
         LDA   $06       ; into routine.
         ADC   #YEARS-GO
         STA   STORE
         LDA   $07
         ADC   #$00
         STA   STORE+1
         LDY   YEARPATCH
         JSR   PATCH

         LDA   BANK2     ; Set bank 2 and read
                           ROM
         LDA   #$4C      ; Put a JMP instruction
         STA   PDATE-1   ; in ProDOS global page.
         LDA   MACHID    ; Get machine ID byte
         ORA   #$01      ; and say 'compatible
         STA   MACHID    ; clock installed'!

         JSR   BLOADZIP  ; Load ZIPCFG to $300.
         BEQ   RUNZIP    ; If no error, run
                           ZIPCFG.
         JSR   BELL      ; Else ring bell
         RTS             ; and leave.

RUNZIP   JSR   $300      ; else run ZIPCFG
         RTS             ; and leave.

PATCH    LDA   STORE     ; This bit patches new
         STA   ($06),Y   ; addresses into
                           routine.
         INY
         LDA   STORE+1
         STA   ($06),Y
         RTS

STORE    DA    0000      ; Data space
MONPATCH DFB   P1-GO+1   ; Offset of MONTHLEN
                           call
YEARPATCH DFB  P2-GO+1   ; Offset of YEARS call

*********************************
*                               *
*   Load in ZIPCFG at $300      *
*                               *
*********************************

MLI      EQU   $BF00     ; ProDOS System call

BLOADZIP JSR   MLI       ; Open ZIPCFG
         DFB   $C8
         DA    OPENPRMS
         BNE   ERROR     ; If error, leave.

         LDA   REFNUM    ; Get file reference no.
         STA   GETEOFRF  ; and set up for getting
         STA   READREF   ; file length, reading
         STA   CLOSEREF  ; and closing file.

         JSR   MLI       ; Get file length
         DFB   $D1
         DA    GETPARMS
         BNE   ERROR     ; If error, leave

         LDA   FILELEN   ; Tranfer file length
         STA   READLEN   ; to Read Parms

         JSR   MLI       ; Read ZIPCFG
         DFB   $CA
         DA    READPRMS  ; NB if error, close
                           file.

         JSR   MLI       ; Close ZIPCFG
         DFB   $CC
         DA    CLOSEPRM

ERROR    RTS

PATHNAME DFB   $6,$5A,$49,$50,$43,$46,$47

OPENPRMS DFB   $3        ; length of Parm list
         DA    PATHNAME  ; File name (ZIPCFG)
         DA    $3000     ; I/O Buffer
REFNUM   DFB   $00       ; File Reference number

GETPARMS DFB   $2        ; Length of Parm list
GETEOFRF DFB   $00       ; File reference no.
FILELEN  DFB   $00,$00,$00

READPRMS DFB   $4        ; Length of Parm list
READREF  DFB   $00       ; File Reference no.
         DA    $0300     ; Load address.
READLEN  DA    $0000     ; Length to read
         DA    $0000     ; Bytes transferred

CLOSEPRM DFB   $1        ; Length of Parm list
CLOSEREF DFB   $00       ; File Reference no.
```

Listing 2

```
*  CLOCK.DRV.G.ZP  Ver1.1
*  by Jeremy Quinn
*
*  With Thanks to:-
*  Yvan Zaneboni for the slow down help.
*  Dennis Doms for the Mover.
*  Glanmire for the Clock read code.
```

```
*  program to patch any version of prodos
*  so that it works with the Glanmire Micro
*  Watch
*
*  This version is designed to work with a Zip
*  Chip installed
*  It needs to slow down the Zip chip so the
*  clock can be read.
*  This is done by accessing Loc. $C070,
*  normally used for resetting the Analog Inputs
*  (Paddles). It only works if you have
*  previously configured the Zip Chip to handle
*  Paddles slowly.
*
*  this routine needs the year to be hand
*  patched when the Program is loaded to $2000
*  Year ie 89 goes in $2089
*
*  ie. in 1990, from the Basic.System prompt
*  go:-
*  Poke 8329,90
*  Bsave /YourVol/SETUPS/
*        CLOCK.DRV.G.ZP,tsys,A8329,L1,B$89
*  Happy New Year!
*

YEAR      EQU   89
M.Vct.Lo  EQU   $06
M.Vct.Hi  EQU   $07
PCL       EQU   $3A
PCH       EQU   $3B
XQTNZ     EQU   $3C
A1H       EQU   $3D
A2L       EQU   $3E
MLI       EQU   $BF00
Datetime  EQU   $BF06
C.Vct.Lo  EQU   $BF07
C.Vct.Hi  EQU   $BF08
Mth.Day   EQU   $BF90
Yr.Mth    EQU   $BF91
Minute    EQU   $BF92
Hour      EQU   $BF93
MacId     EQU   $BF98
An0of     EQU   $C058
An0on     EQU   $C059
An1of     EQU   $C05A
An1on     EQU   $C05B
An2on     EQU   $C05D
SwIn2     EQU   $C063
WB2RAM    EQU   $C081    ; WRITE BANK 2 RAM, READ
                           ROM
WRAM1     EQU   $C089    ; WRITE BANK 1 RAM, READ
                           ROM
*
*
          ORG   $2000
          SYS
*
*   Move Code
*
          LDA   C.Vct.Lo ; find out where this
                         ; version of Prodos
                         ; wants the code
          STA   M.Vct.Lo
          LDA   C.Vct.Hi
          STA   M.Vct.Hi ; setup a Vector to that
                           position
          LDA   WRAM1    ; write enable Bank 2
          LDA   WRAM1
          LDY   #Len-1
M.Loop    LDA   CLK.S,Y  ; move the code
          STA   (M.Vct.Lo),Y
          DEY
          CPY   #$FF
          BNE   M.Loop
          LDA   WB2RAM
          LDA   #$4C
          STA   Datetime ; put JMP in DATETIME
          LDA   MacId
          ORA   #$01
          STA   MacId    ; set machine ID byte
*
*  Quit
*
          jsr   MLI
          dfb   $65
          dw    QParm
QParm     dfb   $04
          dfb   $00
          dw    $0000
          dfb   $00
          dw    $0000
*
*
*  clock code (Relocatable)
*
Clk.S     cld
          lda   $C070    ; This tricks the zip
                           chip into slowing down
*
          LDA   An2on    ; Read Clock From
                           Glanmire Electronics
          LDA   An0of
          LDA   An1on
          LDA   An1of
          LDX   #$04
NxtWd     LDY   #$08
          LDA   #$00
          STA   PCL
NxBit     LSR   PCL
          LDA   SwIn2
          AND   #$80
          CLC
          ADC   PCL
          STA   PCL
          STA   An0on
          STA   An0of
          DEY
          BNE   NxBit
          STA   PCH,X
          DEX
          BPL   NxtWd
*
          LDX   #$03     ; Convert Data
Loop      LDA   PCH,X
          AND   #$F0
          LSR   A
          LSR   A
          STA   PCL
          LSR   A
          LSR   A
          CLC
          ADC   PCL
          ASL   A
          STA   PCL
          LDA   PCH,X
          AND   #$0F
          ADC   PCL
          STA   PCH,X
          DEX
          BNE   Loop
          LDA   #YEAR
          PHA
          LDA   PCH
          ASL   A
          PLA
          ROL   A
          STA   Yr.Mth
          LDA   PCH
          ASL   A
          AND   #$E0
          ORA   XQTNZ
          STA   Mth.Day
          LDA   A1H
          STA   Hour
          LDA   A2L
          STA   Minute
          RTS
*
Clk.E     equ   *
Len       equ   Clk.E-Clk.S; get EDASM to
                determine length of code
```

Program Writer 2.0

Dave Ward takes a second look at this excellent AppleSoft Editor

Program Writer is a full screen editor for Applesoft programs and for convenience is designed to work just like the AppleWorks word processor which makes it extremely easy to use and very powerful. When I reviewed version 1.0 in the August 1987 edition of Apple 2000 magazine I wrote :-

"The best Applesoft Editor I have seen"

After completing this review I have no reason for changing my views.

Observant readers may have seen a more recent review of Program Writer version by Birre Genberg of AUG Sweden in the October 1989 issue of the magazine. Few programs deserve such a high profile. I think, however, that Program Writer is one of them; hence this review.

Purchasing the Program

When you purchase Program Writer you get a nice box containing a 42 page manual, the programs on both 3.5" and 5.25" diskettes and the usual Beagle Bros. advertising and information. The manual is comprehensive and clearly written but with none of the amusing Beagle Bros. diagrams that we have been used to seeing over the last 9 years or so.

When I previously reviewed the product I felt that a number of extra features could be added. With the introduction of this version and the change of publisher some of those features have been added although some features that they felt were not too important have been lost. Another change is that there is no longer a 'free' version of ProBASIC on the reverse side of the 5.25" diskette; a pity.

To use this product you'll require an Apple //e, 128K, an Apple //c or Apple IIgs; this new version 2.0 does not support the Apple][or Apple][plus as did version 1.0. The diskettes are different, not only in size, too. The 3.5" media contains just the ProDOS programs necessary whilst the 5.25" diskette contains these same programs but also a 'hidden' DOS 3.3 version. Although I hardly use DOS 3.3 nowadays many still do and it's nice to see support for this operating system. Figure 1 lists the files on the 3.5" diskette.

Under both operating systems there are three main versions of the Editor :-

1) Standard Editor - which takes up main memory below Dos or ProDOS.
2) Language card version - which loads into the second 64K memory bank in 128K Apple //e , Apple // c and Apple IIGS computers. In 64K Apple //e computers, for DOS 3.3 only, it tries to load into the language card. This version only uses 256 bytes of main memory for its global page interface.
3) Small Editor - which takes up much less memory and would be mainly used where main memory is at a premium. Most of the most useful commands are omitted in this version.

You simply install the Editor of your choice from one of the above menus or by entering BRUN EDITOR.LC when the Applesoft] prompt appears. I install mine using a small Applesoft program a ProSel menu or alternatively you could use an EXEC file. When the Editor is installed it prints a message and then falls into Applesoft :-

```
Program Writer 2.0
Beagle Bros, Inc
Copyright (C) 1986-1989 by Alan
Bird

ENTER WITH &&
]
```

At the] prompt you can load your Applesoft program. Entry into the Editor is simply achieved by typing && followed by 'RETURN'. Figure 2 shows a typical screen.

The bottom line where the FREE memory is shown on the right is the COMMAND LINE. This is used for the entry of 'text' to FIND , REPLACE etc.

Moving the cursor around the screen and moving through the program

As you can see the Program Writer Editor is a screen editor which works just as if the program listing were part of a much larger text file in AppleWorks. The screen is in fact a window on the whole listing. The author, Alan Bird, has tried to make the cursor and editing commands as close to those used in AppleWorks as possible. Simple cursor moves can be made with the arrow keys and like AppleWorks the up/down arrow keys + the Open-Apple key (OA-) cause the listing to move by a whole screen in the direction chosen. The OA- + left/right keys cause the cursor to move to the next word in that direction.

As in AppleWorks the OA-1 keys move the cursor to the beginning of the file and the OA-9 keys to the end of the file. Digits between 1 & 9 cause the cursor to move proportionally within the file. If you have a mouse the Editor allows you to move the cursor at will all over the screen. If you attempt to move the cursor beyond the top or the bottom of the screen the listing scrolls in the appropriate direction. Pressing the mouse button also causes scrolling and the direction depends whether the cursor is in the top or bottom half of the screen. This is rather a nice feature.

When editing Applesoft programs you will most likely want

Figure 1

/PROGRAM.WRITER

NAME	TYPE	BLOCKS	MODIFIED	CREATED	ENDFILE	SUBTYPE
*PRODOS	SYS	32	18-APR-89 14:41	18-APR-89 14:41	15485	
*BASIC.SYSTEM	SYS	21	18-APR-89 14:09	18-APR-89 14:09	10240	
EDITOR.LC	BIN	25	27-APR-89 12:13	27-APR-89 12:12	12012	A=$4000
*STARTUP	BAS	4	18-APR-89 14:53	18-APR-89 14:09	1289	
*CONFIGURE	BAS	9	18-APR-89 14:09	18-APR-89 14:09	4050	
*DEMO	BAS	11	18-APR-89 14:09	18-APR-89 14:09	5056	
*DEMO.ML	BIN	13	18-APR-89 14:09	18-APR-89 14:09	5888	A=$4000
EDITOR	BIN	24	27-APR-89 12:13	27-APR-89 12:13	11366	A=$4000
EDITOR.SMALL	BIN	12	27-APR-89 12:13	27-APR-89 12:13	5435	A=$4000
*MACROS	BIN	3	18-APR-89 14:10	18-APR-89 14:10	960	A=$961E
*MACRO.PRINTER	BAS	5	18-APR-89 14:10	18-APR-89 14:10	1923	

to edit a particular line. You can jump to a line of your choice by entering OA-J when you will be prompted for a number. Pressing 'RETURN' has two effects, firstly the cursor will move to the start of the next line with a number and secondly ALL the line will be accepted.

TAB - moves the cursor 8 characters right
OA-TAB - moves the cursor 8 characters left
OA-, - moves the cursor to the beginning of the line.
OA-. - moves the cursor to the end of the line.

The Replace and Insert cursors

Just like AppleWorks there are two cursors: a white box and flashing underline for replace/insert modes respectively. These may be toggled with OA-E. Clearing from cursor to end-of-line is accomplished with OA-Y. Pressing return only takes you to the next line number and leaves the old line intact.

When you edit a line a + cursor will appear. Whilst this cursor is present you can reinstate the original line by pressing ESCape.

Deleting characters can be achieved by pressing Delete or OA-Delete. Line or lines can be deleted with OA-D.

Other commands allow one to change the case of the text. OA-U for upper case and OA-L for lower case.

Splitting program lines into two

If lines should start to get too long you can split them with OA-T. You are prompted with the new line number which is, by default, 1 greater than the line you have attempted to split. You can edit this to a more satisfactory number, if you wish. If you try to split line 22, for instance and choose the prompt line 23, it will overwrite any existing line 23 without warning!

Cutting and Pasting to the clipboard

Program Writer has cut and paste operations but they are different than those in AppleWorks. Move the cursor to the start of the text you wish to 'cut' and then press OA-C then move the cursor to the end of text to 'cut' this will be highlighted in inverse. Then press return. To paste just move the cursor to the start and press OA-P. This only works on a maximum of one line. New to version 2.0, however, is the ability to cut many lines of the program with the OA-I command. This way one could copy whole routines from one program to another. All you do is to load in the next program and use the OA-@ command which magically restores all the lines to your new program and moves the cursor to the right place in the program! On 128K Apple //e and Apple IIgs computers there appears to be no limit to the number of lines you can copy. Be careful though, as you could overwrite any existing lines that overlap with the ones you are pasting.

Figure 2

```
1 IR = PEEK (175) + 256 * PEEK (176) - 169: GOTO 50000
 2  RETURN
 3  POP : GOTO 21
 4  POP : RETURN
 8  ON F%(F%) + 1 GOTO 20,2: STOP
 9  PRINT "Saving the ED - please wait": PRINT CHR$ (4)"SAVE
ED": PRINT
    "Saved the ED PROGRAM": END
 10  GET K$:K = ASC (K$):K = K - 32 * (K > 96 AND K < 123):K$ =
CHR$ (K)
    : PRINT : RETURN
 15  PRINT D$"COPY" + P0$ + F$ + "," + P1$ + F$: RETURN
 20 F%(F%) = 1: PRINT D$"OPEN"F$(F%): RETURN
 21  PRINT D$"CLOSE"F$(F%):F%(F%) = 0: RETURN
 22  GOSUB 8: PRINT D$"READ"F$(F%): RETURN
 23  GOSUB 8: PRINT D$"READ"F$(F%)",R"R: RETURN
 24  GOSUB 8: PRINT D$"WRITE"F$(F%): RETURN
 25  GOSUB 8: PRINT D$"WRITE"F$(F%)",R"R: RETURN
 26  CALL IR"MAT ZER",F%(0): PRINT D$"CLOSE": RETURN : REM ==
"Closes all ==
 30  CALL IR"PRINT USING","      ";NU;: RETURN
 32  CALL IR"PRINT USING","    0.00";NU;: RETURN
 33  CALL IR"PRINT USING","   0.000";NU / 100;: RETURN
 39  CALL IR"PRINT USING",FM$;NU;: RETURN

FREE: 17649
```

Inserting and Adding new lines

You can enter a new line by issuing OA-I when a blank line is produced with the + cursor. You can then enter a whole line including the line number. Version 2.0 allows one to add lines on any blank line or at the end of the program without the need to use OA-I to create a blank line.;you are prompted to enter the starting line number and increment.

OA-A invokes auto-line numbering. You will be prompted for starting line number and increment. When you have entered all the lines that you desire just press ESCape to return to the editor.

Finding and Replacing

Like all good wordprocessors the Editor in Program Writer has an excellent Find/Replace facility which are invoked by OA-F and OA-R respectively. You can back out at any time by ESCaping. In version 2.0 there are two types of search available toggled with OA-W. They are - search for characters, anywhere or word

search, where the character chosen must be delimited by non-alphabetical characters such as space or * etc.

Renumbering lines in the program

Program Writer allows you to renumber parts or all of your program by entering OA-#. You will be warned if there is a conflict and the renumbering will not take place. One note of caution, however; if your Applesoft program has machine code attached at the end of the program it will be lost on renumbering. Since many of my Applesoft programs have such machine code appended I can't use this feature on them.

Miscellaneous commands

OA-H This, like it's AppleWorks equivalent allows one to dump the current screen to a printer which has been improved in version 2.0 to let one dump the list of variable screen and macros screen.

OA-N This is a toggle that removes all the non-essential (to the program) spaces from all lines in the program. Spaces in REM, Data statements and between quotes are retained, however. The screen looks very cluttered and if you've placed the cursor on a particular line, it won't be there when you press OA-N

OA-V lists all the variables in your program in only a few seconds even for long programs. In version 2.0 you can use OA-H to get a hard copy. Program Writer encourages one to copy whole routines from one program to another which saves you even more time. With this utility you can easily check for variable conflicts and deal with them before pasting in the routine.

OA-X toggles screen between 40 & 80 columns.

Leaving the editor

OA-Q exits the Editor to Applesoft]. This is necessary to enable you to SAVE and LOAD your programs. Do save your programs often during editing. Remember you can re-enter the Editor with && 'RETURN'.

The Program in Use

Using this Editor is so fast that I have had problems in the past where I was editing suites of programs; it's easy to save the program with the wrong name so that it over-writes one of the others. To combat this & make SAVEing of my Applesoft programs

even easier I now set up a line in the program, such as :-

```
9  PRINT "Saving the ED -
please wait": PRINT  CHR$
(4)"SAVE ED": PRINT
    "Saved the ED PROGRAM": END
```

All I do then is to type GOTO9 and the deed is done! once the carriage Return is pressed. RUN9 normally works, too but you might be working with the Beagle Compiler when only GOTO9 works. Saving all my programs with GOTO9 is just like using other systems where the name of the program you are working on is remembered by the system.

OA-Z permits suicide by erasing the Editor from memory. Although the EDITOR.LC version only uses a few bytes of the 48K RAM this may be required by some programs to run properly. If you want to use the Editor again you will have to re-load it, of course.

To Sum Up

Even after 11 years Applesoft is still a very popular programming language which many Apple II owners use because it is so easy and relatively fast. Even with the coming of the Apple IIGS and the new breed of BASICS, Applesoft still performs well and on the Apple IIGS it runs two and a half times faster too. Couple this with the plethora of accelerators available for classic Apple II computers and the Beagle Compiler and you've got a very attractive programming language. Now add in Program Writer and you've got a first class editor, too.

Program Writer, The Beagle Compiler and a fast Apple II computer make an excellent development system for Apple II programs.

If you write Applesoft programs, try Program Writer, it will make development of your programs very much quicker and easier. In fact you,ll wonder how you managed before! I use the Editor for even the smallest Applesoft program because it is so quick and easy.

In conclusion

The new editor appears to be faster, cleaner and has a more professional presentation. With the Beagle Compiler it will give Applesoft a many more years of life!

Dave Ward

This product was kindly supplied to us by MGA Microsystems and is available from them :-

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The Hot Line

❑ Since AppleWorks version 3.0 has been mentioned in the Apple // literature I have been literally inundated with members commenting upon the difficulty in getting upgrades. Some members have sent off their diskettes only, apparently, to slightly increase the mass of an invisible black hole. As one might expect telephone calls to this black hole are one way, too. Those members who have contacted Claris (UK) have been met with blanks and they don't even know of one of their OFFICIAL DEALERS in the UK!! This choice tidbit of information came to me via William Watson who obtained his update a long time ago. This official Claris dealer is :-

Clocktower
86 Weston Park
Crouch End
London N8 9PP
Telephone 01-341-9023
Fax 01-281-7326

Clocktower is run by Alan Finn and he will supply any Claris product; Appleworks 3.0 upgrade costs £60.00 ALL IN.

❑ The above was written just a few days after the deadline for the October issue and since then I have heard more from members who have contacted me via the Hotline:-

1) Many have contrasted the appalling treatment they have received from Claris with their usual excellent treatment from Bidmuthin who are now stocking AppleWorks 3.0. You'll find the address and telephone number of Bidmuthin Technologies elsewhere, in their advertisments, in this magazine.

2) You can also get AppleWorks 3.0 from Holdens Computer Services in Preston. See their Advertisments for their address and telephone number, too.

3) Just as the deadline for this issue is reached I hear that some members have received their updates from Claris. The modus operandi here is that they receive a letter or telephone call saying that their update will be received in three weeks via Ireland. If you've sent off to the USA arm of Claris and haven't heard yet give Claris USA a very nice but very FIRM reminder.

*** When you order an update you will not get the same package as buying a new system; you'll get the manual and a disk but not, possibly, tutorials etc. Check when you order.

❑ System 5.0 users on the Apple IIgs may like to try the following suggested to me by Terry Morris :-

1) On booting-up keep the option and open-apple keys pressed and watch the 'thermometer'!

2) When in the Finder hold down the shift and option keys together and then click on the Apple icon and choose "About...." from the menu. A box will appear with some icons. Try clicking on these icons.

❑ Apple manufacture two excellent computer lines but over here they only admit to one; the Macintosh. Well over there a new Apple IIgs has been launched to replace the existing one. This machine has 1 megabyte on the motherboard and a few major improvements to the ROM with minor improvements to the graphics and sound etc. I've heard of two people over here who have these machines which show ROM version 3 on the screen when booting. If you have one of these machines set the control panel to boot slot 5 and leave it empty. Then attempt to boot the empty slot 5 and you will get a screen with little apples moving horizontally from one side to the other. Press Option + Open Apple + Control + N and you will see the list of developers of the Apple IIgs and in this version of the ROM get a digitised sound of 'Apple two' from those people!

❑ I get quite a lot of enquiries from members with Apple // computers with hard disk systems from the early to middle 1980's who are having problems. Perhaps we could all get together on this one? Would any member who is successfully using an Apple // computer with an older non-SCSI interface such as :-

Corvus
HAL
Symbiotic
ICE

or any other such system please let me know. If you have the System Disks for any of these obsolete drives, let us know if you are willing to pass copies on to others who have inherited drives without them.

I am especially interested in hearing from those who have managed to use a version of ProDOS on these drives later than ProDOS 1.0.1.

❑ Finally, please all note the new number for the Apple II Hot Line:

[redacted]

Dave Ward

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AppleWorks 3.0

Peter Davis finds AppleWorks 3.0 even better than before and well worth the trouble he took to get it

In reviewing AppleworksV3.0, I feel very inhibited trying to find something Tom Weishaar missed out of the article appearing in the August 89 edition of Apple2000. There was not much. But then he did not have the same difficulty buying it, that Claris USA seem to have placed in the path of non-USA residents. Perhaps the toughest part about AppleWorksV3.0, was acquiring it. I have been attempting the near impossible since June. Now I am pleased to say that Bidmuthin, Holdens and MGA stock both new and upgrade versions. Even FrontLine after long and massive silence acknowledge that it exists. What a way to start an article. Even so AppleWorks must be the reason why so many people stick with the AppleII. When something which is a major upgrade appears, I would hardly have expected there to be such initial resistance from the publishers in accepting our money. Let there be no mistake, this is a major upgrade. My second bit of "inhibition" is that to a large extent I have assumed that readers are familiar with the AppleWorks Interface.

Getting Started

The package comes with on 3.5" or 3 x 5.25" disks with Prodos V1.7 equipped with an improved version of Birds Better Bye, which uses "Tab" to move from device to device.

If you have a system clock, there is no more space bar required at startup, so that you do not have to wait at the copyright screen to have the date entered.

If you have additional RAM, this is recognised by the memory manager and a horizontal thermometer screen tells you that AppleWorks is being loaded to memory. Memory management works perfectly with auxiliary slot like AEZ-RamUltra without any software modification and no doubt with the standard Apple memory card. It also works perfectly with standard slot based RAM such as the RamWorks or ASTSprintdisk. Not alas, with Cirtech's older versions of Flipper and PlusRam, at least not yet.

On the subject of Ram, an interesting feature appears to be that a Printer Buffer is enabled if there is excess RAM space within the desktop. When you send data down the line a "Cool Thermometer" tells you what is going on.

The minimum system set up, for 128K is catered for. AppleWorks 3.0 will even run on a one-drive 128K system, but the desktop size is rather smaller. Exactly 40K with AppleWorks 3.0, versus 56K with AppleWorks 2.1 of my simplest IIc.

The Word Processor, Data Base and Spread Sheet are each separate modules. To capitalise on this, 8 options are offered in the "Other Activities" menu for specifying preloading to memory. You can define "none", Word Processor (or any one, or combinations of two), or all modules depending on the module you are using and you available Ram. The "Help Screen" comes up with information for the module you as with version 2.0 onwards.

The pain has been taken out of loading files from subdirectories. You can easily navigate through your subdirectories using the arrow keys. I found this process hard to get used to at first because Open-Apple-> or < keys (comma, full stop) are used. Not quite as easy as selecting normal AppleWorks files, but a needed improvement.

Text files are as easy to add as any other AppleWorks file and appear when ask to load from a TXT file. Saving, sorry "printing a text file to the disk", now assumes you want the current directory. In other words, you no longer require a high performance short term memory to get the path name absolutely correct. There are number of new TXT file options too, in the word processor you are offered, Standard format with Tabs, Spaces substituted for stops, Returns after each line. The Data Base and Spread Sheet are equally well cared for.

The menu makes it all clear that you now have two saving options; saving to the current drive or alternatively the directory the file where the file originated. Many of you will be familiar with Open-Apple-S, but now you get the smart save directly from Open-Apple-Control-S.

"Add files to the Desktop" gets to your list of files and instead of trawling through them one by one, Open-Apple-Down (-Up), takes you instantly through the list. The ruler Open-Apple-1 thru 9 also works.

When you are in an application, you can recognise that you are in AppleWorks3.0 because of the different upper/lower borders. This |====| is replaced by this <====<.

The Data Base

The major improvements include horizontal scrolling, left titles, up to 24 labels across, 20 report formats. Data Base find (A-F) offers "Anywhere" or for greater search speed "In Specific Category". More than 16,000 records in the Data Base are allowed and there is no limit on the clipboard other that how much Ram you have.

Another new and useful feature is the ability to freeze titles on the left hand side of the multiple record layout. This makes good sense with horizontal scrolling. Another interesting feature is a three level sort option under Open-Apple-A. This allows you to sort on say "Name" and "Company" alphabetically (date etc) all at one pass. On older versions of AppleWorks, the same thing could be achieved by sorting (from A to Z) on "Name" first and last on "Company" to have everyone in Alphabetical order where the list contains names if company is blank, followed by a listing by company, with individuals within the company grouped alphabetically.

Unfortunately AppleWorks does not show current time on the main screen, the data base gives this under Date and Time categories which enter the actual Prodos date and time if you type an "@" symbol under the appropriate category. I do mean Prodos time, not "startup date time", which is what would have appeared under any imaginable situation under "Old AppleWorks". This is a new feature.

Word Processor

No more copying 255 lines at a time to the clipboard and you are allowed up to 16,000 lines in a Word Processor document. Multiple line headers and footers. Text files are as easy to add as any other AppleWorks file, and this is feature is still further improved because tabs and returns are correctly interpreted from TXT files from other software. (This is not quite so simple as it reads, but rest assured you get the options you need to handle most kinds of TXT file format.)

Effectively there is another line of Open-Apple-O, Printer options. Amongst these is a date or time "caret" that stamps the document with actual time as you print it. I would have preferred something that shows the actual time on the screen, but then my exact requirement is available in the Data Base. (See later).

There are number of new Control features added a little different but useful. -B for "Boldface", -U for

"Underline" where always there, but now you get -N , -R, -F and -C for "Normal" text justification, for "Right" justification, for "Full" justification (aligning both sides) and for "Centering". Control-P is page break. By the way once you Zoom out no printer or text commands appear, so you see something that looks rather more like the final printed page.

You can now print a single page (or range of pages) in the word processor as from the curser or this page. You still have the same defaults settings of characters per inch, platen width, right margin, left margin, top margin and bottom margin. You can still adjust ci, pw, rm, lm, tm, and bm to get the letter to fit the page.

Mail Merge works like it did before, in conjunction with existing clipboard information from the Data Base.

An UltraMacros feature, Open-Apple-Delete, takes out the character under the curser. I am so used to this one I had to check it never came with virgin versions, of "old" AppleWorks.

Tabbing now works in a way that I can at last use and understand with Open-Apple-T. This feature is now really quite powerful in that tabs can be specified from the right, left, and center with different specifications for each paragraph.

There is a built in spell checker invoked by Open-Apple-V. This has a larger dictionary than TimeOut QuickSpell (395 BLK as opposed to 334 BLK). You get the long one 3.5" disks and a shorter one that fits on a 5.25" disk. There is provision for several custom dictionaries which could match an individual person's needs or a special subject area. Suspect words are offered for correction in two alternate modes. Either in context or as a list as with QuickSpell. The logic is both spelling and phonetic and this is a more powerful system than that of QuickSpell. If you compare "CARREER" on the two systems, QuickSpell gives never ending list of suggestions, AppleWorks3.0 gets "CAREER" in one go.

SpreadSheet

It now possible to have 9999 rows in the Spreadsheet. The limits are off the clipboard, and it really is possible to copy from the one module to another using the clipboard, in an even simpler way than using the TimeOut Clipboard Converter on Versions 2.0 and 2.1 of AppleWorks. The clipboard also allows blocks to be copied between spread sheets, rather than complete rows or columns.

From my point of view the addition of mathematical (Trigonometric and Log), financial and logical functions is a major improvement. There were so many areas where only SuperCalc3A would handle the type of problem I have had to answer, now a good deal of that is past, with 26 new functions added.

Examples are:- <@COS(B15/B14)> the cosine of a value in radians, <@IFG9<160,"Thin","Fat"> for the logic if G9 less than 160 then print "thin" else "Fat". <@RATE(18/12, -48000, 54250)> determines the annual rate of return on a thousand shares purchased at £48.00 and sold 18 months later at £54.00. The answer is 8.5% annual return.

In Paul McMullin's article (Apple 2000 October 89 pp 21) he makes a very interesting comparison between a number of spread sheets listing their built in functions. AppleWorks 3.0 adds 16 functions to his list and leaves SuperCalc still in the lead by 5. This makes a major difference, even though in my opinion, there certain spread sheet features of SuperCalc which make it superior (eg identity of Labels and Values), it does not form part of the integrated package. For the new spread sheet features alone, these new features alone, version 3.0 will be a "must" for people needing these facilities.

The "Old AppleWorks" Spreadsheet had the annoying feature that extra information was required about platen width. With the version 3 spread sheet, you don't have to set this any more, the module reads it from your original printer configuration. The spreadsheet has the same "Print All" feature, which almost works just like before, but with the intelligent improvement that if the data on your spread sheet is too wide for the printer, then the part you

cannot get onto the first sheet, follows on the next page.

Printing

They have added 22 more printers. And for those of you who wanted to access special effects on your printer, italics, higher quality text, special characters, they have added three "custom codes" for every printer, even the standard ones. You can add whatever print effect you like by defining one of those special codes. One little point "custom printer" is listed half way through the printer list. It has been at the end of the list for years and for a moment I panicked !

I have to say this is an aspect I have not fully explored, but the use of AppleWorks with a Lazer printer seems now fully supported.

What is not there

Although there are few new special key commands, I would have liked to see more vestigial macros for really awkward things like superscript and subscript.

Why wasn't date stamping included in the main menu and perhaps more important in the spread sheet ? Well as always there may be an undocumented answer, there certainly is for the spread sheet. The neat @ character from the Data Base, gives date and time under appropriate categories. Use Open-Apple-C <T> (to the clipboard) from Data Base, then another <Open-Apple-C> <F> puts readable date and time into the Spread Sheet in two cells. (Almost like the Word Processor;ie 9.19 PM Oct 30 89).

Why wasn't automatic footnoting included in the word processor ?

It might seem from the manual that you have to have the dictionary in the main directory of a device called / AppleWorks. This is not so. The main dictionary seems to work quite correctly as long as it is in the main directory of a device with any name. / Hard, /RAM7 etc. So fear not, just another undocumented feature!

As if you did not know, most of the mentioned lacking features will be catered for with some upcoming add-ons that will handle these very minor moans and for these of course you will have to pay! A new and even more powerful version of UltraMacros is promised, so lets wait and see.

Is it all worth it ?

There are new file types for files with AppleWorks 3.0 specific data in them. The file type itself does not change, only the internal structure of the file. AppleWorks 2.1 is smart enough to recognize the difference between the two, but AppleWorks 2.0 crashed when I tried to re-load a file that had been through AppleWorks 3.0. The file structures are supposed to be identical to older AppleWorks files, unless you use the "new" features, but in practical terms, you have to make a decision. Just playing around I managed to introduce a new feature without realizing it. To be fair, most times even "old" AppleWorks 2.0 recognizes that something is amiss and gives this warning.

> This file exceeds the limits of AppleWorks on this Apple //.

I also succeeded in getting some unaccountable crashes. This may be something to do with me, but there is a suspicion that just perhaps there may be some bugs lurking. It would not be surprising with a major upgrade of this kind. So it may not be too long before there is a version 3.1. With the support that seems to doled out to non-USA residents, getting the bug free version could turn out to be another horrifying obstacle course and this really has to be weighed in the cost/benefit sum.

If you are like me, you may very well have version 2.0 or 2.1 fully integrated with TimeOut UltraMacros and a whole line of other accessories. The upgrade cost and even the cost of your time in re-establishing all this is considerable.

What will make version 3.0 a totally necessary "must" for some serious users will be the new spread sheet features.

Peter Davis

PRODUCT AppleWorksV3.0

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Communicate

Keith Rookledge tells how ..

Homo sapiens has achieved the ability to communicate. Both verbally and through the computer ...

So where to start? Well the hardware is an obvious choice. Wether you have a II or a Mac you can utilise the electron to communicate with others. You will require a Modem and need to join a network and in addition you will need some software.

As I am a IIGS person I will be dealing with this aspect mainly but many of the observations relate to general matters applicable to Mac and indeed other computers.

I have elected to utilise an Applied Engineering Datalinker. It comes complete with software and utilises 1200 Baud. The current modem can work at 2400 Baud and this is most important as the faster you can send the data the lower the cost, an important facit if you are not on a local call.

The Data Linker has the additional advantage that it is slot based so that you do not have another external box to contend with.

Mac users have to use an external modem and details of a suitable unit are supplied by Apple2000 together with suitable software.

The next aspect is to link into a system. As all of you are aware Apple2000 runs its own board and in addition offers Telecom Gold at a reduced rate.through The Force

In addition there are other systems available, One To One, Mercury 7500 to mention but two and a plethora of systems in the States.

Also, of course you can 'talk' directly to another computer where comparability exists.

For our own TABBS Sysop (That is the SYstem OPerator) or Ewen to us, has made things easy. All one has to is to give one's name, address and password and you are online.

With Telecom Gold the log on sequence is more complex. We operate as a group and therefore have to access the system via our group ID reference. The system is comprehensive and offers numerous facilities.

For instance you can send a Fax. Sending a Fax from an Apple? Yes, comms these days enable you to send and receive Telexes from your keyboard and in addition you can send (only) Faxes to other peoples Fax machines.

Linking into a system obviously requires a phone line. If you have the current BT sockets its easy to link in, you merely purchase a two way adapter and plug your phone into one socket and the line from your modem to the other.

Mercury is an alternative to BT and is much cheaper for long distnace calls.

Keith Rookledge

Contutnued from Page 25

SEGlass	The menu help was removed after we did some user testing. The users we tested were confused by the help feature. After trying to help them with several versions of manual, we gave up and took it out.
Question	I understand that networking will be expanded in system 5.0 specifics. Is there any chance of TOPS for the GS Are there any benchmark speed tests against 4.0 and 5.0 in AppleWorks GS?
Loucks	5.0 supports AppleShare from the Finder...
JimMensch	No reason Tops could not write a version for the GS But Tops is not an Apple product
Loucks	You can have AShare volumes on the desktop as icons...
JimMensch	But, I think that capable since tops uses a protocol similar to our own AFP protocols for Appleshare
SEGlass	As to AWGS...we found that with system 5.0 and the new version of AWGS you could load the fully configure system in 35 seconds versus 4 minutes under 4.0.
AFL TracyP	Please welcome Ray Montagne of the GSOS team!
Montagne	Howdy!
AFL TracyP	Ray, I was reading comments you were sending...would you like to re-create them here all at once?
Montagne	Sure: The transfer rate on the floppy is fixed at 500kilobytes per second but system 3.2 was interleaved at 4:1 meaning it took 4 revolutions to read a single track. System 4.0 was interleaved at 2:1 meaning it took 2 revolutions to read a single track. ystem 5.0 is interleaved at an effective 1:1 on large reads and can read a single track in a single revolution.
AFL TracyP	Next question is from the Gibber....
Question	I have a question about Express Loader.... What is it and what does it do... I couldn't get an explanation an AFest
Loucks	Steve's got this one, hang on...
SEGlass	Express load is a new format for applications. We designed it so that the applications could be loaded from the disk faster than in the past. What we saw was that most applications were being read from the disk in small bits and pieces. But the OS is optimized to read large chunks at a single time. So we came up with a new file format that is more a-tune to the OS and can be read faster. 400% of the AppleWorks GS speed up is from express load, the rest is from the faster disk driver. Hope this answers your question.
Loucks	Existing ("unexpressed") apps running under 5.0 won't automatically take advantage of Express Load....
AFL TracyP	Next question is from Johnny Red.
Question	Will the new OS and the new toolbox help at all with the printing speed?
SEGlass	The new toolbox will help speed up printing, but the biggest improvement will be from the new Imagewriter driver on the 5.0 disk. This driver uses extra memory when its available to speed the printing process. f the memory is not available, the printing is still a little faster because quickdraw is faster. But this is not too noticable while printing.
AFL TracyP	Thanks to Jim Mensch, Brian Loucks, Steve Glass and Ray Montagne for spending some time with us tonight talking about GSOS v5.0!

The Nibbler

❑ I see that System 6.0.4 has been released for the Macintosh. It is now getting very confusing between the Mac and the IIgs whenever system numbers are referred to. Apple insist that it is a System for the IIgs and not GSOS. Perhaps Apple might consider the poor customer once in a while and have some other kind of reference numbering.

❑ Apple have now cured the bug that was introduced into Basic 1.3 and Basic 1.4 has now been released. It is available from TABBS for downloading, and will appear on the next batch of Apple II library disks to be issued. Meanwhile there have been mixed feelings about System 5.0. It is very definitely an improvement and drawing speed is quite dramatically improved where the Quickdraw tools are used, but there are some applications that no longer want to run with it. You should keep a copy of System 4.0 around and boot from that if you have problems.

A suggestion to get round this problem is to install System 4.0, rename the System folders, and then install System 5.0. Prepare a small Basic program which will give you a choice of the two systems. On selection the program should then rename the appropriate folders and do a cold Boot. This way you can have both systems resident on your hard disk at once.

❑ Good heavens, we have come back to hard disks again! It is interesting that most of you who have taken up our offer for Cirtech Diamond disks have been Apple II owners. I am not sure why that should be, it may simply be that Macintosh owners are not aware of the quality of Cirtech products or that there is not the demand for extra hard disks for Mac's. It is encouraging however that Apple II owners are fitting hard drives, it makes an excellent machine really sing and dance with a hard disk installed.

❑ You will see from the article on Page 13 that at least one member has tried Ewen's route of 'do it yourself' hard disks. It was interesting to see that the first drive that Bill Mealey received was faulty. Seagate drives are reckoned to be excellent drives, but Ewen tells me he had the same problem, and it was not till the second unit was delivered that he got it all going.

For those who wish to contact Seagate directly, their address is as follows:

Seagate Technology Ltd.
Manson Place
Kelvin Industrial Estate
East Kilbride
Glasgow
G75 0QW
Tel: 0355 235951

The Seagate interface manual is available from them and is also available from RS Components for around £4.96 plus VAT.

❑ I earlier mentioned the Cirtech Diamond drive, Cirtech of course are better known for their expansion cards for the Apple II series. Cirtech cards using 32k DRam chips made before the summer of '87 have problems with the newer system software. At the time of writing Cirtech have no plans to support these software changes made by Apple. A solution is to get hold of an empty 1 meg AST SprintDisk card and swap the chips over. The bare AST card sells for around £24.95 and has no problems with the new system software on the IIgs.

❑ Many of you now know of the IIgs machines that have been appearing on the secondhand market. These are the result of a tachometer reading franchise that changed hands. Typically one of these secondhand systems will consist of a 256k IIgs (with new ROM), two 5.25 Apple drives, a printer card and a Monochrome monitor. All the various parts are usually 'as new' and prices are around £250-£300 for the package. However most of you will want to fix the machine up to cope with GS/OS. To do this you will need to get a memory expansion card and a colour monitor.

There are various cards available for the memory expansion, from Apple's own one to the Applied Engineering and the Cirtech card. If you intend fitting an accelerator of some kind, check that the expansion card will work with your accelerator.

The main expense will be the colour monitor of course. The video output of the IIgs actually appears on two sockets. There is the usual phono socket with line video output, but this is NTSC or US standard colour. You will get a black and white picture only on European monitors or televisions. However the RGB connector gives standard RGB output. Many of the newer television sets are now being fitted with a SCART connector to interface with RGB and other devices. You will see the letter on Page 4 giving the actual pin connections. If you want to connect this way you may be interested in contacting Ron Gladwin at:

UK Home Computers
82 Churchward Avenue
Swindon
Wiltshire
Tel: 0793 695034 (after 4pm)

They provide an RGB/SCART connector for around £11, and a Thompson RGB colour monitor for the Atari with SCART connector for around £179.95. This should work just fine on the IIgs.

❑ One of our members contacted us at the Mac User show to say that he had Vol 1 No 1 of Mac Tutor surplus to requirements. This is free to the first caller to contact him on [illegible].

❑ Having seen the Mac Portable at first hand, I am very impressed with the machine. I understand that it is now selling like hot cakes in the States. However it is an expensive beast at the moment. When it has dropped in price and filled itself up with a good working

set of RAM, I will consider it as essential as the standard fixed Mac workstation. The screen is actually larger than a standard Mac screen, and is as easy to read in almost any light. The worst thing I found was trying to use the trackerball. This is a real art to master, quite unlike the friendly mouse, just which fingers do you use!

❑ It has been quite a year so far. We started with the Mac II having turned into a IIx, and we finish with a IIcx, a IIci and a portable Mac on the scene. The humble Mac II has been made redundant and obsolete! How long till the IIcx bites the dust? I can't see it being bought when the IIci is available in quantity.

Apple are pushing the Mac architecture a long way from its humble beginnings with the 128k Mac and 400k drive. I suspect that in the wings they must be working on the successor to the Macintosh. This should take us forward for the next 5 years or so. Will it be a radical departure from the Mac, or will they build in compatibility in the way the IIgs followed in the footsteps of the Apple II?

❑ Talking of the IIgs, although we had a motherboard facelift this year, we still await the real IIgs+ to be launched. This is the much awaited 10mhz, 400 line resolution machine that we have talked about for some time now. Will it see the light of day next year perhaps?

❑ Rumour has it that Apple might hive off the Apple II line in the same way that it formed Claris to deal with marketing Apple software. The rumour also has it that Steve Wozniak will head up the team. This would be quite something. Woz would certainly let the IIgs line develop into the advanced machine that the IIgs ought to be!

The Nibbler

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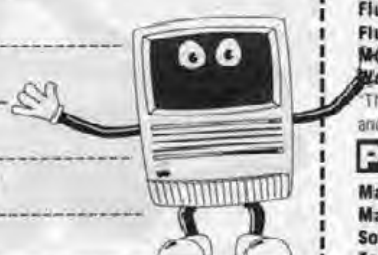

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Works on Mac II

always check with us for compatibility as many games do not work on Mac II's, x's and SE 30's

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MacChat

Norah Arnold looks at three letters received by Apple2000.

Letter from Pleasant™ Graphic Ware

As a result of our review of Heraldry III, the following letter was received at the P.O.Box from Pleasant™ Graphic Ware, P. O. Box 506, Pleasant Hill, Oregon 97455.

Thankyou for your letter of 13 August 1989 and the enclosed review of our Heraldry III disk. We are pleased to have had such a favourable review. Perhaps your members would be interested in some of our decisions regarding creation of the disk.

We expected that heraldry in this country would be of particular interest to genealogists, fantasy game players and graphic designers. We were correct in our supposition, but also found that there are many heraldry buffs who study the subject simply as a hobby. These four groups became our customers. For our purposes, in this country only the graphic designers may be considered professional users of the art of heraldry. Heraldry is usually a subject of casual or hobbyist (as opposed to official? sanctioned?) interest in this country, and to date almost all of our market is here.

Most Macintosh owners here purchased their computers when Apple included MacPaint as part of the purchase price, and they are familiar with its use and with the compatible FullPaint and SuperPaint which soon followed. Relatively few Macintosh owners then used its graphics capabilities professionally. Now, those who do require more sophisticated software such as Illustrator.

When I began the project, all clip-art disks were based on MacPaint. Even when Illustrator became available (at mid-design stage), MacPaint seemed more logical, because all of the disk capacity could be devoted to images. I did not have to include MacPaint itself on the disk because most Macintosh owners already had it, whereas most did not have Illustrator or other programs like it. Furthermore, including the Illustrator application would have required at least one additional disk in the package and a licensing agreement with Adobe.

I agree completely that MacPaint does not do justice to intricate heraldic images. My object was to include as many as possible, to create a means for people to learn about the rules and forms of heraldry and to experiment with heraldic design. In fact I was surprised at the amount of detail obtainable even in MacPaint.

I assumed that professionals would use their Paint/Heraldry creations as a basis for more elaborate PICT designs. From the responses we have had, I was correct in the above broad assumptions. A graphic artist reported that she got fairly satisfactory enlargements by using SuperPaint, and a Canadian purchaser who owns a trophy production company obtained the same result using MacPaint II. Both methods required some clean-up (known locally as "picking pixels"). Printing on a laser printer produces smoother (and I do emphasise the comparative adjective) curves even in Paint format, and I am including our brochure to illustrate this.

Regarding the lack of crests, supporters and blazons, this was a question of disk capacity. The finished disk was almost as much a process of selection as of creation. As you pointed out, including everything on the subject of heraldry is "probably an impossible task," barring the use of multiple disks at prohibitive cost. Of our anticipated North American market, only the heraldry buffs know (or care) about blazons, and they write their own using the voluminous literature on the subject. The other buyers simply want the images and the basic rules for the shields. Heraldry and Heraldry II did not have enough disk capacity for any examples of supporters, crests, and mottoes. I included them on Heraldry III because integration of the two disks reduced the combined number of documents (each of which takes 2K without images) and opened up additional disk capacity.

We see indications in Macintosh publications that software to convert images from Paint format to PICT will soon be available. For this reason we have not begun conversion from Paint to PICT. PICT experts will make their own conversions, and Paint-format users won't necessarily have the PICT software or even the RAM to use it.

We hope the above account will explain the content of our three disks, even though it will not satisfy your objections. We have had limited response from purchasers and do not know what uses they make of the disks, although sales of the supplementary Heraldry II indicated satisfaction with Heraldry.

Thank you again for your letter and for the review. If we can answer further questions, please let us know.

Sincerely,
Ann Steffenson
Pleasant™ Graphic Ware.

Help with MacinTalk

Can any member help the writer of this letter?

17 Cedar Court,
Somerset Road,
Wimbledon,
London SW19 5HU

Dear Apple2000

Could anybody help me to use MacinTalk in Pascal programs?

Owner of a Macintosh Plus, I spend my spare time playing

around with programming in Pascal (at a very basic level). I use LightSpeed Pascal Version 2 and can find nowhere a hint on how to program to have my Mac speaking.

I usc often HyperMacinTalk to have the Mac speak under HyperCard and it's great.

Regards,
Jean-Marie Chouillet
Membership Nº 3431

Multifinder Compatibility.
The following letter was sent to the sysop of **TABBS**, the Apple2000 electronic bulletin board.

First may I say how sorry I am for the delay in finally sending this little essay on the tribulations I have encountered whilst using my Mac II, Multifinder and Red Ryder. I hope the following comes in handy when you come to start using your Mac II in similar circumstances.

System Information
First as a basis of this review of Multifinder compatibility I have listed below the system I am using at present.

Mac II with 5 Mbyte of RAM and Colour Monitor (256 colour) and internal 65 Mbyte Qisk hard disc
Finder : 6.1
System : 6.0
Multifinder : 6.0

I know that there have been many 'reported bugs' in the system 6.0 software but I have now knowledge of them. The problems I have listed below may or may not be known to you.

Red Ryder Version 9.4
As you know I have had many problems with Red Ryder whilst using your Bulletin Board, many thanks again for your assistance. Whilst using the usual communicating medium of receiving messages/mail and sending the same Red Ryder performs faultlessly. However when trying to download files (after setting the protocol to X-Modem) the programme expires with " Red Ryder unexpectedly quit" error message. Occasionally the system will 'bomb' requiring a restart.

These errors do not appear when using Red Ryder under the Finder only if Multifinder disabled. I have successfully downloaded many files from the Bulletin Board using this combination. One other word of warning, I suspect that using Red Ryder with the Colour option set to more than 2 bytes can also cause the same problems even when working in the Finder. I have not investigated the permutations further as I do not wish to send my telephone bill to start soaring any higher! I have a combination which now reliably works and I intend to stick with it for the time being.

I know that the latest version of Red Ryder is 10 and I intend to register when I make a business trip to the States later this month. It is much easier to send a money order from a US post office than try to get my bank to do some kind of credit transfer.

RAM Discs
There are two ram discs to my knowledge in the user group's library. I have tried to use RAM+ on my system but it only caused MacroMaker to bomb with the message "Bit map damaged" (if my memory serves me correctly). This was not fatal as by simply recopying the files restored the status quo.

Zippy
This amusing little piece of nonsense which throws up an animated face on the screen and says silly things can lock your system !. It is designed to operate under Multifinder but when I went to the control panel to increase the volume my machine locked up !. The only way out was to reset the Mac using the side button.

Other Software
Of the other software I use I cannot report any difficulties except where noted.....

HyperCard 1.2.2
The only problem I have encountered is if you are editing a script with the control panel monitors section set to other than 2 bits. In this combination when editing scripts with the Hypercard background selected, using cut and paste, large blocks are selected even though you might be trying to select a single letter or word. This selected block cannot be dropped and I have found the only way out is to exit the script window by using the "ENTER" key as the mouse/pointer has no effect on the buttons at the bottom of the window. Resetting the Monitors section of the control panel to 2 bit will remove this problem. Note that the colour/black & white option in the same section of the control panel has no effect on the problem.

Wingz
This programme is so far totally robust, but then I have not been using it for that long and have not started scripting yet.

Mac Write v 4.6
No problems so far with Multifinder except on large files I have had it lock up on me twice, something I think to do with the mouse.

Chuck Yeager's Advanced Flight Trainer
This was not designed for Multifinder use but I have not experienced major problems except when switching between programmes the sound can become disabled. Not a great problem as the keyboard command "N" will activate it again.

That ends my discussion of the current state of the problems I have encountered so far with my Mac after a years usc. I hope it will be of some assistance to you.
Mike Dawson

(I hope you like the horse, Linda)

Omnis 5

A review of this latest version of a favourite databse, by Bill Pearce

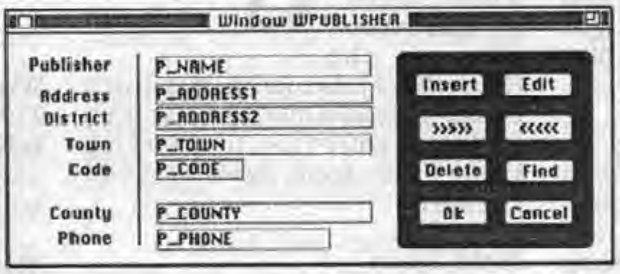
Omnis has taken a quantum leap forward with version 5. I was expecting to find a few extra commands, bits of jiggery pokery here and there. Nothing could be further from the truth. There are three sizable manuals plus the usual pocket reference guide. This last is conveniently in 'Filofax' format. There is the Programmers Reference, the Application Designers Handbook, and Getting Started. Databases are notoriously difficult to explain — you need to know so much before you can understand anything. Blyth are to be congratulated on the improved manual presentation. These manuals are easier to navigate than the earlier versions, though the earlier spiral binding was handier than the new clumsy ring folders. The 'Getting Started' avoids all the needless repetition that can make documentation so annoying to read. I suspect the real reason why people avoid reading Macintosh manuals is because they are tired of reading how to switch on, insert a disk and move a mouse.

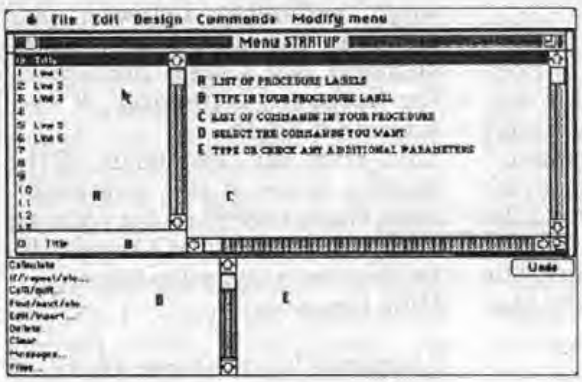
'Getting Started' opens with the words 'G. S. should be the first manual to be read by a beginner or a first time user of Omnis'. Heartened by these words I ignored the manual and plunged in the deep end. In a remarkably short time I was completely up the creek without a paddle. Then I devoured G.S. from cover to cover and wished there was more, lots more. Omnis 5 is powerful. With power comes responsibility. You are given rather full control of menus, even the standard menus (install, remove, disable, enable, and more), considerable control of windows (type, size, go away, clicks behind etc.). It would be remarkably easy to program yourself into a dead end with no means of quitting except to switch off the Macintosh.

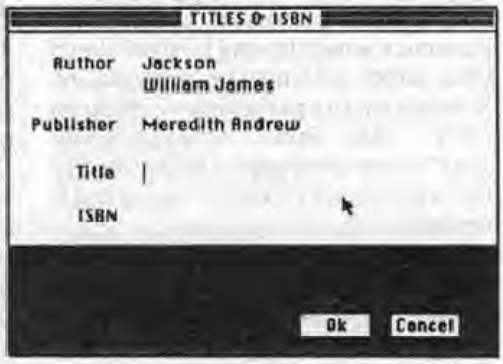
Still on the topic of getting information about Omnis, there is the Omnis D.A., renamed Omnis 5 Help, which operates in exactly the same way as the earlier HelpLine and still forgets to reset the Mouse cursor after a prompted Save. It had to be renamed to avoid overwriting your previous Help file. To my mind, the best help of all is in the form of an example program 'Documentation', which gives access, in the way only a database can, to documentation that is more explicit even than the printed manual. It always surprised me that this was not done in earlier versions.

There is still an Omnis Express, an ingenious quick-start system that I have always considered superfluous. First you must learn how to use it, then how to move your work into the full Omnis. It's rather like the ill-fated Initial Teaching Alphabet — first you learn how **not** to read then you learn how to read properly.

The example programs demonstrate something of the new power of Omnis. The 'Welcome to Omnis 5' program is so like Hypercard you could imagine you were in Hypercard. Even the simple tutorial program demonstrates a technique that was not possible in earlier versions (I had spent many hours trying to do it), that is, to create a scrolling text box. The nearest you could get was a scrolling line editor.

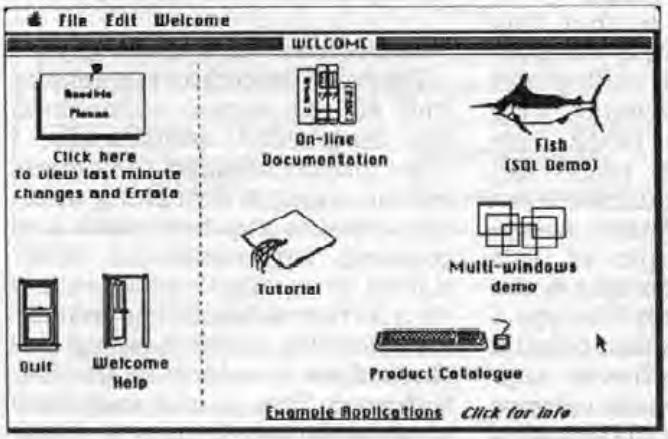






Hierarchical/Relational

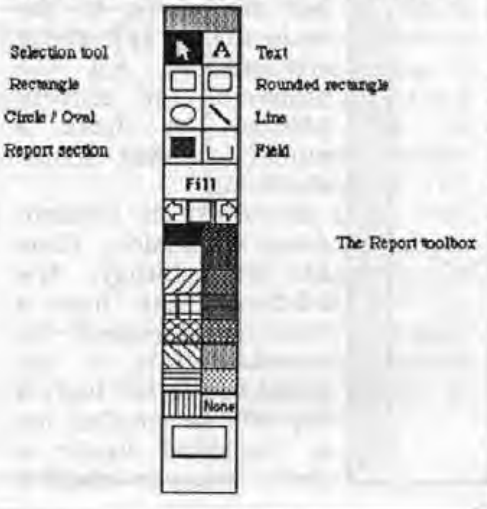
Much confusion arises on account of the hierarchical file connections that Omnis can generate automatically. There is no difficulty in establishing any file relationship you wish, or manipulating subsets of files and so on. Under some circumstances the automatic connection can impose a straightjacket and should be used only if it is appropriate. In the **Catalogue** example illustrated, each book title is connected to one author and one publisher. When the file formats were defined, the *TITLES* file was stipulated as connected to the *AUTHORS* file and to the *PUBLISHERS* file. Whenever a new title is inserted, Omnis looks to see which author and which publisher are currently in memory and the link is forged. Whenever that title is found, the author and publisher are automatically found. If however you had not told Omnis to connect the files, you would need to create the link yourself and ask Omnis to find the appropriate records. The hierarchical link is only a subset of the possible links, and is not always the best answer.



Designing a file format is much as it always was, with the addition of the picture field type. Maximum string length must be stated but is no longer stored as a fixed length (hence more compact storage). Regrettably with the date type Blyth have gone more deeply into the quagmire. There are now **three** date types, 1900-1999, 1980-2079 and 2000-2099. Their claim that calculations across the types are valid is not true. When there were only two types, you could easily calculate that anyone whose age appeared to be less than zero was probably 100 years older than appeared. Centenarians were not allowed to be born at all. What will happen now I dread to think.

Anyone upgrading from version 3 to version 5 has much relearning to do. Think of it as being promoted from point duty down a cul-de-sac to air traffic control at Heathrow. Although many of the old techniques will work, they all need to be tested and verified. A calculation no longer affects the flag automatically. Forget what you learned about the array and learn to manipulate lists instead. A procedure (is but old sequence writ large) can now call itself. I always got 'too many nested what-have-you's' when I tried this in earlier versions. A file format that has been used may now be deleted with impunity. The simplest way to spot all the differences is to start from square one again.

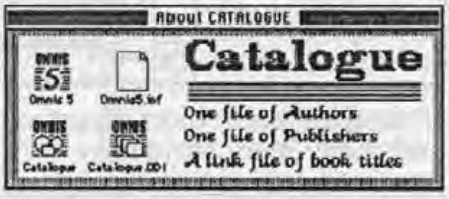
Much of the old infrastucture is there in a new guise. What is a reversible block? It is the old 'Restore current record at end of sequence': it may be slightly more flexible in that it obviates the need to write the reversible block as a separate sequence; but you must wait till the end of the procedure for the reversal to take effect — so what you gained on the swings you lose on the roundabout. A reversible block in effect takes a snapshot of things as they are now, and re-establishes the *status quo* in so far as that is possible, at the end of the current procedure, or when the window closes, if the block was defined in the open window procedure.



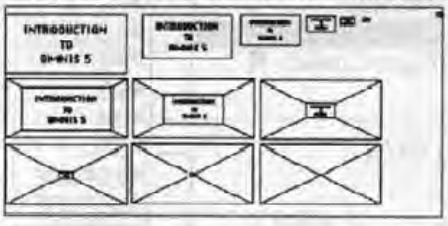
The Report toolbox

Perhaps the most obvious enhancements are the picture field; the draw type graphic tools available for designing backgrounds for data entry screens and reports; availability of fonts, styles and colours for all screens. Omnis connectivity was always good. Version 3.3 had an SQL interface: version 5 has a Hypercard interface. Both are well documented in the 'Application Designers' Handbook'. Among the file types that can be exported is a new Omnis data transfer type, presumably to be recognised by DOS versions of Omnis. Omnis data transfer includes pictures and text fields up to 32K long that can include control characters. Other new types are Lotus WKS and dBase. The graphic type is discontinued. Each type is fully described in the manual. Pictures can even be passed to the PC by declaring them to be 'shared', which I take to mean bit-mapped.

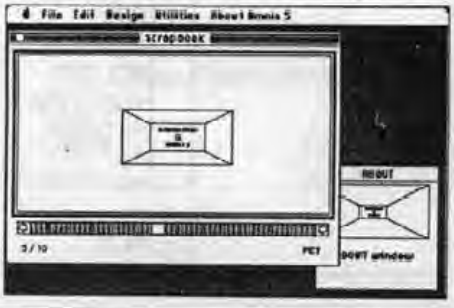
Carried away by the picture possibilities, I designed three 'About' procedures. One simply



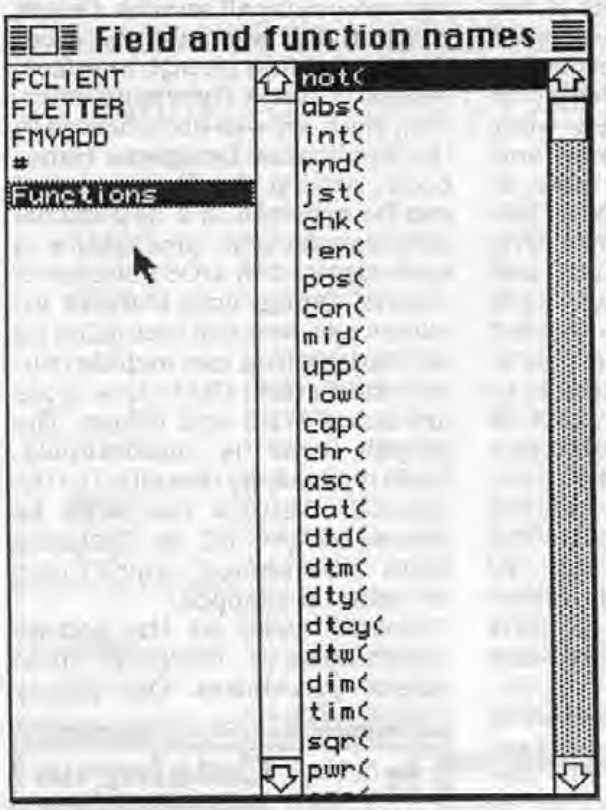
imported a picture from the Clipboard as a picture object and hence is not lost if a new datafile



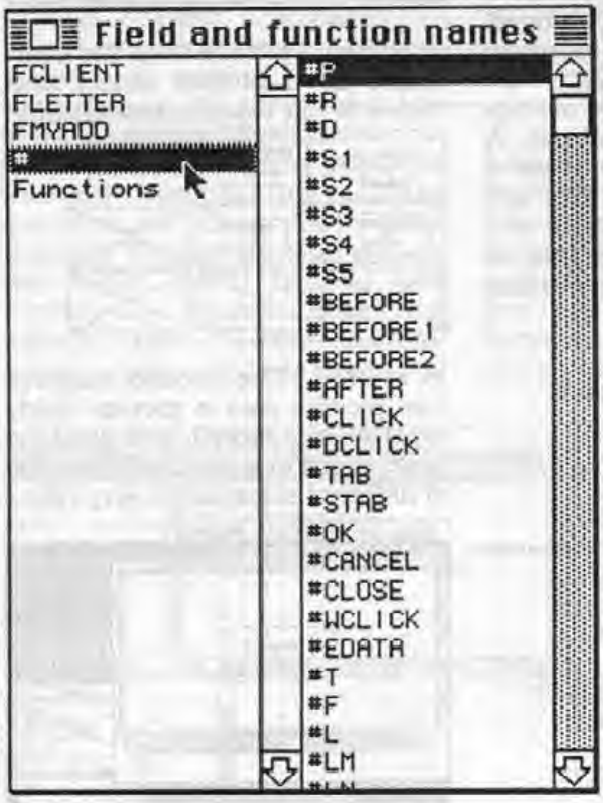
is started. The second imports one picture into a picture field, creating one record, and displays that record in a series of windows of different sizes: not a very effec-



tive animation. The third imports seven pictures into a picture field, creating seven records: Displaying these records in rapid succession gives some semblance of animation. The disadvantage of methods 2 and 3 is that these records will be lost if a new datafile is opened.

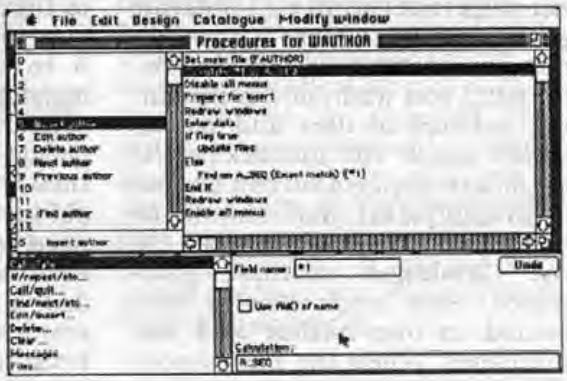


There are many more functions and many more temporary variables. I did suspect Blyth were playing the numbers game here. For instance, a whole new series of variables report your every move during 'Enter data' mode and appear to replicate the EDWC variables, which are still there. If they serve a different purpose, I have yet to fathom it. Could it be that some of the plethora is due to the new compatibility with the 'other side'? Yes, the claim is that this version is **fully** compatible both in coding and datafile structure with DOS and OS/2 versions. This might explain the sudden *embarras de richesse*. A further example of this wealth of options is the 'memory only' file type. I am not convinced that it actually achieves anything: it was always possible to make use of a dummy file, or for that matter a real file, without necessarily inserting the data as a stored record.



New maths functions include sin, cos, tan with inverses, exponential, factorial, log to base e, log to base 10, maximum/minimum values, annuity, modulus. String functions can now return an ASCII value. Scores of new SYS variables return information that is either specific to the current application, e.g. number of records in the main file, or to current environment, e.g. the name of the current printer, is there a mouse, current screen width etc.

In view of the tremendous expansion, there are surprisingly few hitches. Blyth have a healthy disregard for non-essentials. If the scroll box is left high & dry when a scrolling list is exploded (quite a clever idea), so what? It corrects itself at the next scroll. Altogether this version seems to be extremely stable.



Procedures: the exploding list

The list of procedure commands (the old 'sequence' commands) has lengthened dramatically. I have always admired the Omnis resourcefulness at making available what is required when it is required. Any command terminating in an ellipsis is a heading for a further subset of commands. Double-click on the heading and the subset is added to the list, indented. This subset may itself contain further headings. Finding the required set would be an impossible task were it not for the Reference Manual which lists **all** the commands in strictly alphabetical order and describes the path to that command. Further information about **every** command includes:

- Reversible: Y/N indication of whether this command is reversible
- Flag affected: Y/N indication of whether this action affects the flag
- Parameters: List of the possible parameters that may accompany this command.
- Summary: Brief description of its purpose.
- Description: Fuller discussion of the effects of this command.

This is one way in which the manuals are more helpful than previously. Many of the descriptions are more explicit and occasionally a technique is explained that had to be learned by trial and error before.

Menu procedures/ Window procedures

Every menu offers a command list window similar to the old sequences window. So too does

every data entry window. The menu procedures window will list the commands that are activated by menu selections, while the widow procedures window lists the commands activated by the buttons **on that window**. Either type of procedure window may hold many more procedures that may be called from anywhere.

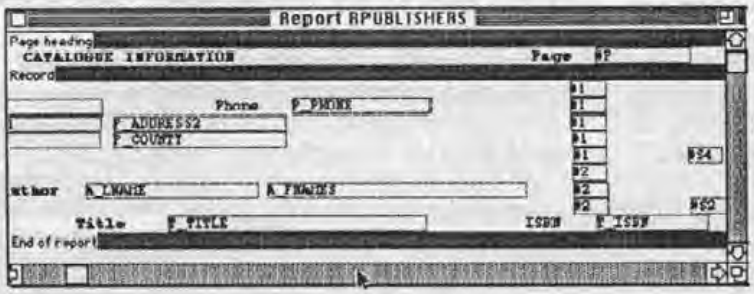
Buttons

It is now possible to define your own buttons and button areas anywhere on screen: buttons that behave like buttons, that is. A most thoughtful provision in the button definition parameters is the facility to define the button as unavailable unless a record is present. This saves the hassle of testing for a record before allowing EDIT or DELETE. As before, OK and CANCEL appear only during data entry, **BUT** only if you have remembered to define them. You cannot have the freedom of DIY **and** the luxury of having everything done for you.

Utilities, once a separate program, are now available on the menu. They are also smoother in operation. The request to reorganise data does a quick global tour of all the file formats and reports back. I have always held that **this check** should be automatic whenever any data file is opened. It could prevent a datafile from becoming a hopeless tangle of garbage. Clearly many users will have several data files and frequently more than one application ('application' being the new term for 'library').

Upwardly mobile?

Much of this review has been a comparison of version 5 with version 3, in the belief that this approach would offer more useful information to more readers.



Blyth do not pretend that version 5 will effortlessly convert earlier libraries and datafiles, although it makes a valiant attempt. The differences are so great that my preference would be to rewrite from scratch. America has three gifts to the civilised world, two of which are beneficial. One is the Macintosh. The other is the simple rule of thumb *'if it ain't bust don't fix it!'*. If your Omnis 3 Plus application works, leave it a'be.

Minor complaints department

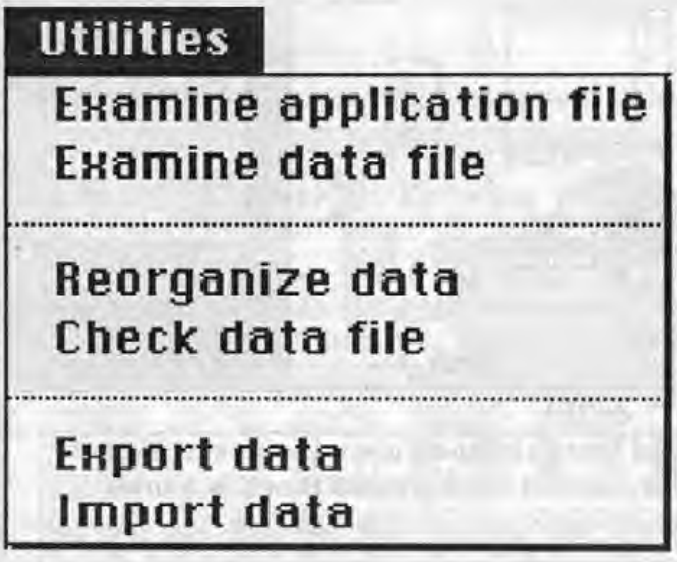
The new dialogue boxes for changing application file or data file do not tell you what file you are currently using. This was a most useful feature of version 3 Plus. Many human errors, especially programming errors, are caused by forgetting where we are **now**. I frequently used the old dialog boxes just for the purpose of checking which library or which data file was current.

While text is being typed in an entry field Omnis does not call 'obscurecursor' so the mouse cursor obstructs your view of the screen until you have typed your way past it. This would be a small courtesy, showing consideration for the user.

I could not discover where to find information about the many menus that become installed while developing an application. It **may** be that all their many options are explained in the 'Getting Started' at the appropriate point.

Desert Island Disk

If I were stranded on a desert island and allowed only one disk, I would be very tempted to take Omnis 5. It combines data processor, word processor, programming language, draw program (it is the only program I possess that has 'draw' tools!). There are now so many highways and byways to explore, a spell on a desert island would be the ideal way to get to grips with all this new-found power.



info

Product: Omnis 5
Publisher: Blyth Software
Available from:
MacLine
01 643 4626

Price: £425.00
(plus P&P and VAT)

Value:
Performance:
Documentation:

Déja Vu

Déjà Vu

A review of a great adventure game

by Ceri Fisher

Do you like adventure games ? If so, you'll love Déjà Vû...

Good evening. Welcome to a nightmare come true.

You are waking from a stupor that feels like a chronic hangover after a week in Vegas. There is a throbbing bump on the back of your head, big enough to make your hat size look like an Olympic record. You notice your right palm is covered with dried blood, but you neither see nor feel any open wounds on your body. On your left forearm you feel a sharp pain under the shirt sleeve. Rolling up the sleeve, you discover what looks like a fresh needle mark. "Have I been injected with something?" you wonder. Then you realize, "I? Who am I?" YOU CAN'T REMEMBER!

As you come out of the fog you are able to make out your surroundings. You have no idea where you are and why you're here. You have no memory ... W H A T S O - EVER!

You're about to find yourself framed !

The first things you'll need are a gun and a raincoat, and, in true adventurer's fashion, explore by going in and out of things, tackling assailants, dealing with third parties and a few other tricks besides.

It arrives on two 340K disks, (yes, the single-sided ones - remember them ?) and is thoroughly copy-protected - no installation on a single 780K or hard disk is possible. This is a pity as it leads to the old disk-shuffle on start-up and at sundry other times and places, although it generally manages to avoid happening at the worst possible moment.

The graphic interface is good, objects can be transferred from the environment (wherever you find them) to the inventory (or any suitable item within it) and back by just dragging them.

Rooms are right there (or behind doors), and pointing and clicking is enough to open, enter or do something else appropriate. As in all adventure games, you can't always go back so easily...

Notes can be taken easily (Copying from the dialogue window, and pasting to the scrapbook or whatever) and there are some important details which need to be remembered.

There are interactions between what you have and what's Out There, and these are actioned by the "Operate" menu command - as in: click on the key, click "Operate", click on the door: unlocks the door.

The whole game is very well-behaved, apart from the old-fashioned disk nonsense mentioned earlier, and it doesn't like Multifinder.

As with all games of this type, there really is only one way to play it - you have the clues and there is just one way to deal with each situation as it arises. The 'character' in whose shoes you find yourself was an ace boxer - so in many places there's no alternative to slugging your way out of a corner.

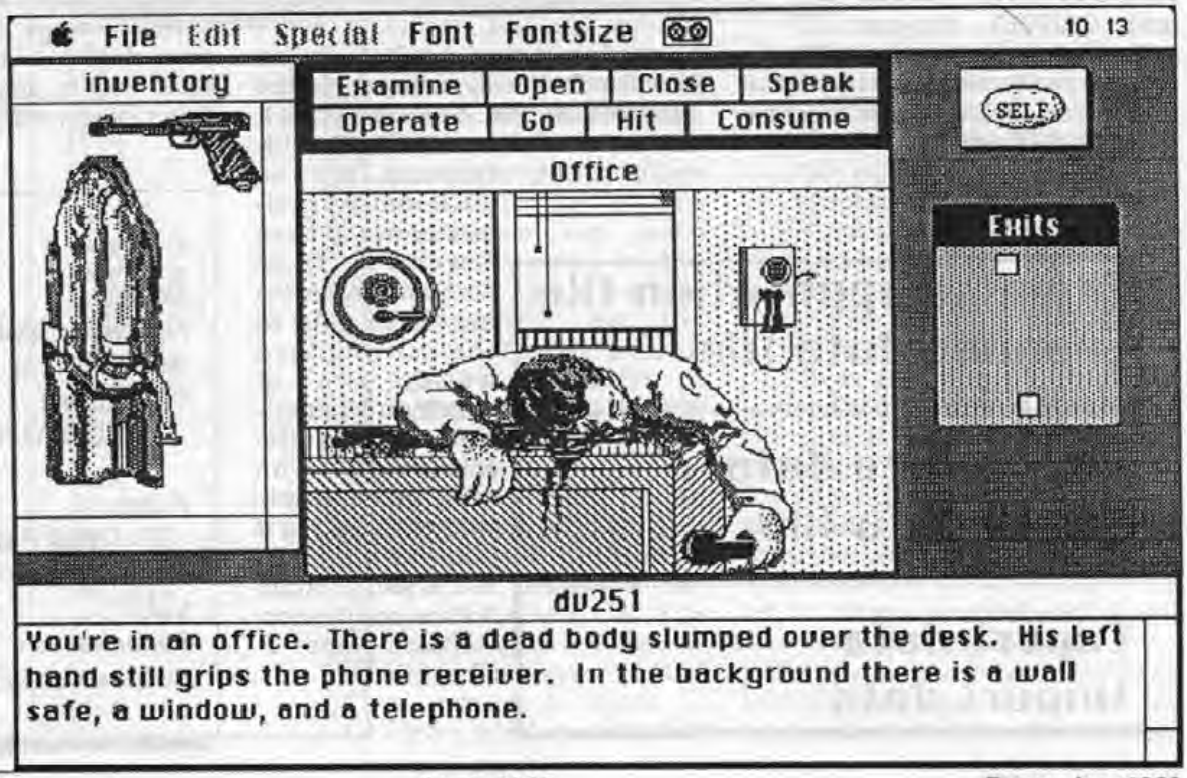
I'm unwilling to say much more because I certainly don't want to spoil it for those of you for whom this is just how you like to spend £24 and a week of evenings... Have fun.

Rating

Performance

Documentation

Value-for-money



AppleXtras

Apple2000

are introducing a new service for members, called **AppleXtras**

In exchange for an additional subscription of £20.00 per annum, you can enjoy the convenience of having a mixture of P.D. software sent to you at the same time as your Apple2000 magazine — that's six disks a year.

The new service will be available from February 1990, so our P.D. librarians are busy right now — selecting the goodies to go onto the first disks.

Three formats will be available :-
Apple II — 5.25" ProDOS
Apple IIGS — 3.5" (800K)
Macintosh — 3.5" (800K)

The cost will be the same for all three formats — just £20.00 per annum. If you want to subscribe for two formats, we can supply them both for £35.00 per annum.

Don't delay, just complete the enclosed application form and return it to the P.O. Box with your cheque or your credit card details.

AppleXtras subscription
£20.00 per annum
or 2 formats for
£35.00 per annum

What will 1990 bring? Rumours abound!

It has been reported from the States that Apple are planning to release at least three new Macintoshes within the next year.

The new range would include a low-cost replacement for the Mac Plus and Mac SE, a lower-cost colour machine and a successor to the Mac IIx.

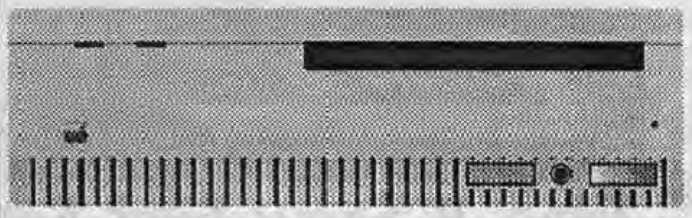
The Mac Plus/SE replacement is expected to use the same 68000 central processor as its predecessors, therefore it would not be able to take advantage of many of the features of System 7.0 — but it is expected to incorporate a 1.4 Mbyte SuperDrive.

The lower-cost colour machine is expected to be based on the 68030 processor used in the Mac IIx, IIcx and SE/30. The machine should be designed with System 7.0 in mind, so it is expected to take full advantage of the system's features and should run about four times faster than the Mac Plus.

The third machine is reportedly designed to provide improved performance for processor-intensive applications such as desktop publishing and CAD.

Rumours are also flying about other possible developments in 1991 — including a new Mac Portable based on the 68030 processor. Wonder if the speculation will continue as long as it did for the original portable?

Apple Inc. admit problems with the AppleCD SC



Apple Inc. have now acknowledged complaints from both users and developers, that its CD-ROM player — the AppleCD SC — misses data in some circumstances, and that it may eventually be unable to recognise disks. The problem is attributed to dust collecting under the laser lens, but Apple are hoping to announce a solution to the problem soon.

Beagles Bros. Inc. announce first Mac product

Beagle Bros. Inc. have announced their first Macintosh product. The company is well-respected as a developer of Apple II software, so this diversification may come as a surprise to many.

The new product, called "Flash", is a network utility that allows the sharing of files in the background by using a folder system. The principle is similar to that used by Claris's Public Folder, but with the advantage that the files sent by Flash will be made available only to the addressee.

Book Reviews

A selection of Macintosh books reviewed by John Arnold.

Stephen Wolfram
MATHEMATICA™
Addison-Wesley 1988, @ £19.95
750pp.

Mathematica™ is a very important software package, and very large, it needs a considerable amount of memory to work in, the C source code amounts to some 180,000 lines. The software runs on a range of computers from the Macintosh to supercomputers, and many of these will be networked to terminals. Hence the need for this publication to be obtainable from bookshops for students and those who are able to access the software, but who haven't got their own manuals. The book is in fact distributed as part of the package, as well as the manuals specific to the machine on which it will be run.

The sub heading of the book "A System for Doing Mathematics by Computer", describes the basic aim of the Mathematica package, although this description doesn't give any indication of the multitude of possibilities available from within Mathematica. This book is written by the person who originated the idea of Mathematica and who also wrote much of the code, the first page after the title sheet gives a list of all who were involved in the development and what contribution they made.

The book describes Mathematica as it applies to any machine, although where a front end screen is shown in the text it is the Macintosh screen that has been selected. Also the book is not about applications, it does not give details of writing the Mathematica notebooks, these areas will be addressed in further books (The latest Addison-Wesley catalog lists two such books to be available late 1989). This is meant to be a book review not a software review so I will restrict myself to the task in hand! It is a rather thick book which can be obtained in paper covers or in hardback, having a rather nice cover (generated by Mathematica to give a 12 megabyte colour bitmap). There are no further colour images in the body of the text. There are four sections and two appendices. These being:-

0. A Tour of Mathematica
Gives a brief overview and examples of what can be done.
1. A Practical Introduction to Mathematica.
Mathematical operations with a graphical section.
2. The Structure of Mathematica.
How Mathematica works, starting with how expressions are handled, leading to input and output, and finishing with a small section on resource management.
3. Advanced Mathematics in Mathematica.
Here details of numerical precision, mathematical functions both elementary and advanced, polynomials, manipulating equations, calculus, power series, linear algebra, and numerical operations are described.
4. Mathematica as a Computer Language.
A short section on programming from within Mathematica.
A. Some Examples of Mathematica Packages.
A quick look at some typical Mathematica packages including a look at Gosper's algorithm and ending with three dimensional graphics.
B. Mathematica Reference Guide.
The complete reference section to Mathematica.
Index.
Each section starts with a full page of graphics printed via the PostScript output of Mathematica, with full details of what function and lighting was used to produce the image.

Very little information is given in the text of the mathematical algorithms used to produce the output which for a mathematician is rather disappointing. As with all the Addison-Wesley books I have seen recently the production is faultless, the text is well illustrated by actual output from the program, and should be seen by anyone interested in Mathematics, unfortunately however they will not be able to take advantage of what the text offers, unless they have access to Mathematica.

(An aside for those well into Mathematica, I understand a Mathematica Journal is to be published next year, although at the moment I have no further details.)

Thom Hogan
THE PROGRAMMER'S APPLE MAC SOURCEBOOK
Microsoft Press 1989 @ £21.95.

This 462 page reference book for the Macintosh consists essentially of tables of information, gleaned from the Macintosh reference tombs, Inside Macintosh Vols I to V, and a number of the other standard works that programmers need to refer to at some time or another. The advantage of the current book is that the information has been collected together into one volume, with the tabular presentation of the data making the retrieval of specific information much easier than it was before. Most of the tables contain cross-references to other relevant sections in the book and also details of the source of the data.

I doubt that this reference book will be the sole source that programmers will need to refer to, because obviously the original sources will contain much additional material, but I wouldn't mind betting that it will be the first to be picked up when something has to be looked up.

One difficulty for the author must have been that of obtaining up to data details, and this shows in some of the notes provided with each table, as some of the information is only accurate to system 4.2.

There is an extraordinary

amount of detailed data in this volume and should without doubt be on the desk of all Macintosh programmers. The author promises to update the volume to deal with new Apple machines as they appear, with more information relevant to the MacIIX being included in the next edition.

Another reference book is:-

David Holzgang
POSTSCRIPT PROGRAMMER'S REFERENCE GUIDE
Scott Foresman 1989 @ £22.95.

This book which runs to 486 pages consists of three parts, the first 370 pages is the Postscript language reference section, followed by a Cookbook section, with Appendices completing the book. I must admit that I haven't had the book long, and consequently I have not read it all although that is my intention as I find PostScript an interesting language. However one thing is immediately apparent from even a superficial glance through the book, and that is the rather low numbers of graphic illustrations, which to me is a disappointment. The Cookbook section does give the PostScript code for those illustrations that are printed in the book.

A card in the beginning of the book invites the reader to send the completed card together with $19.95 for a disk containing the Cookbook examples plus a number of other interesting and useful programs.

The main body of the text collects together and makes available in one volume, information that can be found in the several PostScript books that are currently on sale.

The book is probably more readable than many reference books, but I question the necessity for both an introduction section which gives an overview of the book as a whole when the reader then finds that each section also starts with a description of what they have in store when they read the remainder of the section.

Gary Bond
XCMD's FOR HYPERCARD
MIS Press 1988 @ £19.95, 468pp.

This book is for HyperCard users who are also either Pascal or C programmers. It contains many examples of coding, each example being given both in Pascal and C, of XCMD's and XFCN's with details of how they may be used from HyperTalk, and how they can be added to HyperCard. The various chapters are as follows:-

1. Designing XCMD's and XFCN's,
2. Understanding XCMD's and XFCN's.
3. Accessing HyperCard's Internal Structures.
4. Creating Your First XCMD
5. Debugging and Related Information
6. Ready-to-use XCMD's and XFCN's

Appendices.

I have found this book to be most useful, as I found some things in HyperCard to be rather slow, and I needed to speed things along a bit. Without this book I doubt whether I would have located the necessary information needed to write and attach to HyperCard the compiled Pascal coding required.

The coding in the book is for MPW Pascal, and Lightspeed C, although I found no trouble converting to Lightspeed Pascal.

A useful book, well worth getting for anyone who needs to add their own coding to HyperCard.

Paul E. Hoffman
MASTERING MACINTOSH EXCEL 2.2
Bantam Books 1989 @ £20.45, 346pp.

This book is stated to be for 'intermediate' users, ie. those who are familiar with the Macintosh and with some of the spreadsheet operations, and who want to make more use of the Excel facilities, but find the Microsoft documentation rather daunting.

There are sections dealing with Worksheets, Databases, Charts, Macros, Printing, saving and data transfer, followed by an Excel reference section. Apart from a substantial section on Macros, the use of macros within Excel is emphasised in many of the other sections, with plenty of examples given.

The book applies to version 2.2 of Excel, with its new features and functions, although no emphasis is given to the new features, these come in at appropriate places in the text. I would have liked to have seen the items in the reference section cross-linked to corresponding pages in the text, and also in a book of this nature, where the text refers to particular items at other places in the book, it would have been more convenient to have the chapter numbers displayed along with the page numbers at the top of the page. The book is nicely printed with plenty of illustrations of sections of worksheets, macros, dialog boxes etc. and should take the reader from an elementary knowledge of spreadsheets to a point where they can make much more use of the features to be found in Excel.

Recommended!

Deke McCelland & Craig Danuloff
MASTERING ALDUS FREEHAND
Dow Jones-Irwin 1989 @ £19.50, 312pp.

With most software packages that have a number of powerful features, some additional material, other than the manuals alone is probably required by many users, a view obviously shared by many of the publishers. This book is the first on FreeHand I have seen and is very well printed on good paper. The Colophon at the end of the book gives the details of the software and equipment used to produce the text and illustrations, the results as shown in this book being an excellent advertisement for desktop publishing with the Macintosh. The book deals with, I believe, the original version of FreeHand, not version 2.0 because nowhere can I see a reference to the version number. There are a multitude of illustrations as would have expected from a book specifically dealing with a drawing package, although no colour illustrations appear anywhere. Sixteen chapters take the reader through the process of using FreeHand, explaining the use of the various tools available from the palettes and menus.

The last chapter is titled Aldus FreeHand and the PostScript language and contains some interesting Postscript information and coding. The Appendix has details of customising FreeHand with ResEdit. An excellent book and a useful addition to the Macintosh graphics library.

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Artificial Intelligence

What Every Macintosh Programmer Should Know

by Anna O'Connell, P.E.

This is the second of two articles on Artificial Intelligence by Anne O'Carroll. The first article was printed on pages 54 to 57 of the previous issue of Apple2000, October 1989.
The first article dealt with the following:-

- **Artificial Intelligence Hardware**
- **Macintosh II Co-Processors**
- **AI Software Techniques**
- **Inference Engines**
- **Model Based Reasoning**
- **Expert System Development Shells**
- **Knowledge Representation**
- **Why Use AI?**

Why a Mac for AI?

With the introduction of the Macintosh II, Apple finally began to acknowledge the fact that the Macintosh interface is an ideal environment for artificial intelligence work, and to market the machine accordingly. Based on Xerox STAR technology, and owing an additional debt to Xerox LISP workstations, the Macintosh is a machine designed around object oriented programming paradigms (There, I did it. Every article on artificial intelligence must contain at least one gratuitous use of the words "paradigm" or "heuristic". It's a guild rule.) Macintoshes feature the rich user environment of windows, icons, and menus that were originally developed by AI researchers using LISP. Many of the first Macintosh programs available were for doing AI-ish things, like speech generation from text. And then, of course there's HyperCard as a built in front or back end for knowledge representation.

Another reason for using a Mac to do AI are the coprocessor boards previously mentioned. LISP machines are very definitely computers "for the few of us", since they cost more per workstation than most of us make in a year. You can do useful, fast-response AI development and deployment on these hybrid computers for less than half of what a LISP machine would cost.

And for those of you who want to put high-powered AI into a hostile environment, there is a solution tailor-made. Automatix, of Billerica, MA makes something they call an AI90 factory floor controller. It consists of a Macintosh II repackaged with an upgraded power supply, NEMA 12 enclosure, positive pressure cooling air, and rack mounting. Adding a LISP co-processor to one of these will give you an industrially hardened LISP machine, with all the data collection facilities, numeric processing power and connectivity features of a Mac. Manufacturing engineers and factory systems integrators, please take note.

An additional reason for choosing the Mac is the availability of some truly excellent expert system development shells and other tools for AI work. Nexpert Object is an extremely powerful development shell, combining rule-based and object oriented programming power. AI systems developed using it are highly portable among the machines for which Nexpert Object is available. Those machines currently include the Macintosh II under either standard System or A/UX, 80286 and 80386 DOS machines running Windows, UNIX workstations from Sun, Hewlett Packard and Apollo, VAXes from the microVAX up, and will soon include IBM mainframes running VM and MVS. It is priced at $5,000 a copy for the microcomputers and workstations. For the VAX and IBM mainframe versions, the price is $7,000. For more information, contact Neuron Data in Palo Alto, CA or the Bechtel AI Institute in San Francisco, CA. Neuron Data wrote and sells the shell; the Bechtel people train purchasers in its use and do development work as well as sell product.

Another shell that has enjoyed great popularity in the DOS world is GoldWorks II. At the August 1988 MacWorld exposition it was announced that Gold Hill and Coral Software (of Coral/Allegro Common LISP fame) had cooperated to port this shell to the Macintosh. The president of Gold Hill was widely quoted as claiming that this was NOT just a straight port of the DOS tool– that it had been redesigned to give it a complete Macintosh interface. From what I saw during several hours of playing with a (very robust) beta copy at the show, he was correct. The software is now shipping, it is powerful, very flexible, and has excellent hooks to interface building and data management tools that will be familiar to most Mac programmers.

The Mac version of this program owes as much to the skill of the people at Coral Software who developed the underlying Coral Common LISP for the Macintosh, as it does to the people at Gold Hill who wrote the software designed for a souped up 80286 machine, in Gold Hill Common LISP. The asking price for this shell is $7,000 in both Mac and DOS versions.

How to get Started in AI

If you are already a Macintosh programmer skillful at using procedural languages, you need not listen to

what I am about to say. You have already proven that you are one of those driven individuals who *have to know* all about the details of everything. But for those of you who don't have all the A traps memorized, or who never did master programming in an assembly language, much less the ability to create one, listen up! Mastering a complex new skill takes time, effort, and a certain amount of innate talent. You cannot tell whether or not you have the necessary talent until you put in the time and effort. You will NOT be able to learn all about AI overnight. Do not attempt to produce programs written in LISP (at least not for money) if you are only recently aware that it is something other than a speech impediment.

On the other hand, you can learn to do some useful and interesting things fairly quickly by using tools developed by those more skillful than you are now. I strongly advocate that beginners seek out expert system shells that represent knowledge in the way that seems most natural to the problem being solved (more on this later!). Or purchase a natural language parser if you are trying to add ad hoc querying capability to a database application. Or keep your eyes and ears open for the availability of an XCMD inference engine for HyperCard (at least three organizations I am aware of are developing one of these).

The next thing beginners (and this includes beginning Mac programmers, as well) should try is an object oriented program development system. The basis of object oriented programming (OOP) is the idea that data items are objects that belong to classes. Each individual item or object, can both inherit some characteristics of its' parent class, and possess unique characteristics that distinguish it from other objects.

One of the characteristics an object can possess is called a "method", which is a description of the objects' behavior under specified conditions. Objects interact with each other by passing messages, which can either trigger methods or can cause the recipient object to acquire a new method form the donor object. Either MacApp or Smalltalk V is an excellent choice if you want to learn about object oriented programming systems. Smalltalk V can be had from Digitalk Inc. of Los Angeles, CA for $199.95.

Choosing A Problem To Solve With AI

As with any other programming effort, you should assess the "market" for an AI project before you set to work. Is the problem you want to solve significant in terms of the time or money currently spent on surmounting it? Is a faster, more reliable solution worth the time that will be spent to develop that solution? Will someone use the program once you have developed it? Unless at least one of these questions can be answered yes, you have a "toy" problem. These types of problems are OK for early experimentation, or to solve using a variety of tools in order to get a feel for the capabilities of the tools. But you should not put very many hours into work on this kind of problem. You won't learn enough. Even if you will be the only "customer", make your learning exercises as practical as possible. But you need not always be your own customer. Perhaps one or more local hotels would buy copies of a Restaurant Advisor expert system for their out of town guests (as long as it recommends their own restaurant, too). Or other members of your HMO who own computers might appreciate having a program to diagnose childhood diseases, telling them when they need only wait for nature to take its course, when to head for the emergency room, and when their child should see a doctor soon but can wait for regular office hours.

Is there an existing solution method? AI techniques can be useful to clearly define the limits of what is currently known about a solution method. And they may be able to apply an otherwise impractically slow method to a greater variety of situations distributed in time and space. But AI cannot make something out of nothing. Tackling unsolved problems is NOT the best way to learn to use a problem solving tool. This warning is equally applicable to experienced developers who ought to know better. You can't always believe everything your advertising copywriters get past the marketing department.

Is the solution method ill-suited to expression as an algorithm? For many of the smaller problems, and for the early stages of development on many larger ones, those portions of a solution that can be expressed as algorithms can be found in textbooks or manuals. If a problem can be solved using procedural programming methods, and you know how to use those methods, do so. If a purely algorithmic solution is inadequate, AI may be a way to improve the situation. If there are several possible algorithms, and the real problem that users will face is choosing the most appropriate for a given situation, they may need a hybrid AI and procedural system.

Do you, the potential developer, have access to someone who is expert in applying the existing solution method? Is that expert communicative and co-operative? The analogy for non-AI software development is your application specialist. (see The Business of Software articles on Application Selection and Team Building) You wouldn't try to develop a CAD system for architects without having a few architects hanging around to tell you what architects do and how they think. In AI development, the knowledge engineer's access to the domain expert is a critical issue for designing, developing and testing the system.

And last but not least, is the problem "well bounded". Are there a finite number of possible solutions given each set of initial conditions? If there is more than one possible solution or answer, are they all equally good so that you can stop when the first one is found? Or is there a way to evaluate possible solutions to determine which one is "best", and is that way practical in terms of time or resources required to evaluate? Is there a finite number of ways to describe the possible initial conditions?

Choosing an AI Development Tool

It is an article of faith with me that one should always use "the proper tool for the job". I own a variety of screwdrivers, both manual and powered, several prybars, and not a few chisels. Depending on what it is I want to accomplish, I choose the tool most suited for the task in terms of size, weight, material, design intent, and accessibility. While it is possible

to use a screwdriver as a wood chisel, I would only choose to do that if no suitably sized wood chisels were available when and where I needed to do the job. In the same way, I choose software development tools based on what the software under development is supposed to do once it has been developed. In general, you should use the highest level tool available if it does what you need it to do.

Choose your AI development tools based on the characteristics of the problem being solved. A programmer friend of mine whose formal training was in biology claims that all programming problems ultimately boil down to correctly defining the "taxonomy" of the problem. He meant that knowing or developing a consistent, clear terminology that assists the developer to understand the relationships between factors affecting the problem and its solution, is critical to designing a program. My friend further says that the source of most difficulties in program implementation lies in insufficient attention to making the design reflect the taxonomy. These two statements are even more important for AI programming. The limitations on knowledge representation methods available within a tool may rule it out for certain classes of problems. There are many types of knowledge that cannot be expressed in production rules. And semantic networks in which the terminology used is imprecise cannot be parsed to give unambiguously correct relationships among objects. Give careful thought to the characteristics of the knowledge you are including in a system before you decide on the technique you use to capture and encode that knowledge.

The next item to consider is whether the tool supports the reasoning methods required for an adequate solution. Trying to solve a real-time alarm monitoring problem with a backward chaining inference engine is begging to be frustrated. Developing a large rule-based system using a tool that does not have some mechanism for prioritizing the order in which rules are tried will annoy you during development, and your users once the system is deployed. And using Prolog to develop a system relying on model based reasoning will almost certainly doom you to failure. Use forward chaining inference for data driven or situation analysis type systems. Use backward chaining for diagnostic or classification systems. Plan for the time to develop customized inference engines for problems which require model-based reasoning. And plan to need all of the above if you tackle anything still being defined, like "real time scheduling".

The last item to consider in tool selection is the hardware and software environment that the final system will require. Are the tools you need to build a good user interface built into the environment or easily accessible from within it? Can software developed with this tool be invoked from other programs or invoke such things as DBMS in a manner transparent to the user? Can you develop effectively using the same hardware family on which the system will be delivered? If the answer to all of these is yes, you have a good candidate tool for your project. If it also meets all the criteria in the paragraphs above, you can count on being able to work effectively on the problem you selected.

Where To Look For More Information on Artificial Intelligence

Books:

The Handbook of Artificial Intelligence, edited by Avron Barr, Edward Feigenbaum and Paul Cohen. This three volume set defines terms, summarizes seminal research findings, and acts as a pointer (or sometimes a handle) to more academic sources. Extremely complete up through its' publication date in 1982.

Expert Systems; Artificial Intelligence in Business by Paul Harmon and David King. A survey of the commercial uses of expert systems. Currently a little dated; this is a good book to hand a manager who wants to know a little bit about the technology before buying into it.

Crafting Knowledge Based Systems: Expert Systems Made Realistic by John Walters and Norman Nielsen. The single best book for the potential developer of expert systems I have encountered to date. The chapters on knowledge representation, reasoning methods and user interface design are especially germane. This is a must read for apprentice knowledge engineers.

Structure and Interpretation of Computer Programs by Harold Abelson, Gerald Sussman and Julie Sussman. If you really crave to learn LISP programming, this is the book for you. Used in the mandatory freshman computer course at M.I.T.

Common LISP, the Language by Guy Steele Jr. Widely accepted as the definitive reference on Common LISP. Heavy sledding for those not accustomed to language definition manuals or intimately familiar with LISP. Use as a reference only.

Magazines:

AI Expert published by Miller Freeman Publications, 500 Howard St., San Francisco CA 94105. Subtitled "the magazine of artificial intelligence in practice", this is where gadfly columnist Harvey Newquist gores someones' AI ox every month. Full of code samples (also available via CompuServe and USENET) and realistic, useable reviews. Until late (November) '88 there was little or no Mac content. Advertisers wised them up, and they're trying.

IEEE Expert published by the Computer Society of the Institute of Electrical and Electronic Engineers. Back issues of this irregular quarterly can be found in most university engineering libraries, or can be purchased from IEEE. Contact Reader Services, P.O. Box 16508, N. Hollywood, CA 91615. Mostly very academic, but highly readable reports on recent research.

MacTech Quarterly, in which the article you are cur-

rently reading was first published. This publication focuses on software development using procedural languages (Pascal, C, FORTRAN), object oriented programming systems, and customizable applications (HyperCard, 4D, GoldWorks II). Forthcoming articles will include detailed reviews of AI languages and development tools for the Mac if the makers of same wish to supply either reviewers from among their customers or single copies of their products for review.

Artificial Intelligence Magazine, published by the American Association for Artificial Intelligence. Highly academic, extremely prestigious journal. This is the place the researchers publish their latest discoveries. Not bad, if you remember that it will take at least a year for anything first mentioned in an article here to be used commercially. This organization also sponsors an annual conference that is the AI world's place to see and be seen.

A Comparison of Expert System Shells Available for the Macintosh:

Product Name: Instant Expert
Manufacturer: Human Intellect Systems
Price: $50
Knowledge representation: rules
Inferencing mechanism: not stated
Interface design tools: not included
Integration with other applications: import screens via clipboard

Product Name: Cognate
Manufacturer: Peridome, Inc,
Price: $150
Knowledge representation: rules, facts
Inferencing mechanism: forward chaining, backward chaining
Interface design tools: Mac toolbox
Integration with other applications: import screens via clipboard

Product Name: MacSmarts
Manufacturer: Cognition Technology
Price: $195
Knowledge representation: examples, some rules
Inferencing mechanism: rule induction
Interface design tools: import from other applications only
Integration with other applications: Excel, HyperCard are mentioned

Product Name: SuperExpert
Manufacturer: SoftSync
Price: $199
Knowledge representation: examples
Inferencing mechanism:forward chaining on induced rules
Interface design tools: import from other applications only
Integration with other applications: working on HyperCard in July 88.

Product Name: Cognate (developers' version)
Manufacturer: Peridome
Price: $250
Knowledge representation: examples. richer rule structure than Cognate
Inferencing mechanism: forward chaining on induced or explicit rules
Interface design tools: import from other applications
Integration with other applications: via embedded object code modules

Product Name: MacSmarts Professional
Manufacturer: Cognition Technology
Price: $395
Knowledge representation: examples, richer rule structure than MacSmarts
Inferencing mechanism: forward chaining
Interface design tools: import from other applications
Integration with other applications: spreadsheets and HyperCard

Product Name: Instant Expert Plus
Manufacturer: Human Intellect Systems
Price: $498
Knowledge representation:rules
Inferencing mechanism: forward chaining and backward chaining
Interface design tools: some pre-formatted. import from other applications
Integration with other applications: "hot buttons" to launch other apps.

Product Name: Nexpert Object
Manufacturer: Neuron Data
Price: $5,000
Knowledge representation: rules, frames, objects
Inferencing mechanism: forward chaining, backward chaining, pattern matching, & custom
Interface design tools: Macintosh toolbox. Also import from other applications
Integration with other applications: via embedded object code modules

Product Name: Gold Works II Macintosh Version
Manufacturer: Gold Hill Computers
Price: $7,000
Knowledge representation: rules, frames, objects
Inferencing mechanism: forward, backward, pattern matching and custom
Interface design tools: Macintosh toolbox. also import from other applications
Integration with other applications: embedded object code modules or launch.

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What Do You Do With Yours?

An observation of the Apple computer user's trials and tribulations, by Mike Dawson.

The title of this discussion may, to the passing unconcerned eye, conjour up images of seaside postcards, nudge-nudge, wink-wink squire. However to many, if not all, of my fellow Apple computer users no matter what machine they may use, be it at home or office, the title will strike dread at the very depths of your heart. This is undoubtedly the single most common and potentially dangerous question any personal computer user can face.

The person posing this question can come in many different guises and all pose serious problems. Particularly vulnerable are those of us who are fool enough to reveal that we spend countless hours locked away in a room staring into a glowing TV screen. Do not be fooled into a false sense of security as all computer users are vulnerable to attack. Even having an old computer like an Apple][is no defence to the relentless onslaught of the curious layperson. This can be taken as a compliment that a computer with a 20 year design history should still in some circles promote awe. Unless there is adequate reason (and opportunity) to avoid the potential attacker here are some of the typical persona the 'enemy' comes disguised as.

'The Nerd'

This type of person is one which typically bought a 'Popular computer' to play games on and cannot comprehend how anyone should be able to find anything else to do on a computer that is more productive. A very difficult assailant to shake off as this person will repeatedly return and corner you at the office party or in the pub just after a particularly long day punctured with system bombs and scrambled disc directories. A nerd will spend endless hours trying to discuss the finer merits of the Sinclair tape discs for the early Spectrum computer or that he can't see anything in optical drives (geddit?). An ample repost is to ponder upon where the bytes go when the monitor is switched off. Do they disappear down the little dot in the centre of the screen?. The Nurd should, providing it is not the hybrid species Maximus Boreus, be confronted with what, to it, seems to be a bigger Nurd and take flight.

'The Boy Racer'

This is potentially one most tenacious assailants as they are particularly confident that the have the fastest computer in the neighbourhood if not the country. This is invariably an IBM and is reflected with the boy racer's fixation with clock speeds and wait states (a paradoxical fixation as the first causes the second). These people are analogous to the Ford Escort XR3i owner. Their confidence is usually based upon a computer magazine article plus a few pieces of go-faster gismo's. No matter how you may try to defend yourself this assailant will have a ready repost clouded with shaky logic and facts. Only the most confident and technically minded person should attempt a frontal assault on this type of specimen.

'The Born Again Luddite'

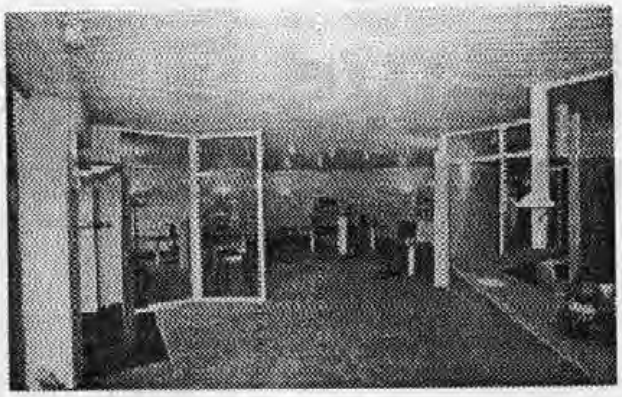
This person simply hates computers ever since they bought a premium bond in 1955 and 'Ernie' has not paid up yet. No matter what you may say or do, nothing will subjugate their paranoia for the relentless march of computers over their lives. A computer is a modern evil to them and will berate anyone with a religious fervour who professes an interest in one let alone owning one. On no account tell a born again Luddite that there is a microprocessor in their toaster as this may lead to starvation.

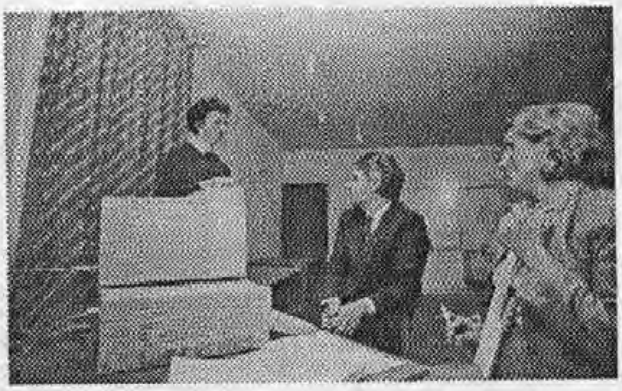
'The Economist'

This is a fellow computer owner who could not afford an Apple and settled for an Amstrad PC. They no doubt regret doing this as the Macintosh is so much more attractive to the girl next door. So they pull up their drawbridge and fight from behind the battlements of cost. "You must be a fool to spend so much money" is their usual opening sling shot. No matter how hard you try to point out the obvious (to you) advantages of the Macintosh over the PC compatibles they will not listen. A good defence is to torture them when you wax lyrical about Multifinder and the integrated operating environment. Warning - on no account mention the increased likelihood of system bombs when using Multifinder. This will only aid their defences when they attempt an assault on the next unfortunate Apple user they happen to stumble across.

'The Jones's'

No matter what piece of equipment you may have the Jones's will have a better, quicker one that they bought last month at a cheaper price. These people seem to spend their entire lives looking for the next piece of Hi-tech with which to dazzle their friends and acquaintances. The best defence to this blatant one upmanship attack is to try the reverse snob technique. This is quite simply to tell them that you frequently achieve the same thing with your good old Apple][. So there you have a concise review of the major headaches you may encounter as not only a computer owner, but an Apple computer owner. Many of you may be asking how I manage to defend myself from the slings and arrows of computer ownership. I have a universal panacea, I say quite simply that my Colour Macintosh II is an expensive toy which I indulge myself with at home. The result ? -I can smugly watch them turn green and wither!.





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Network News

The latest news, tips and gossip from the networks.

From Infomac

From: ISSTTH
Subject: **FONT/DA JUGGLER PLUS (FDJP)**
Hello everybody. This is a summary of the replies I've got concerning running the same copy of FDJP on several machines. First I must clarify that I am trying FDJP out with a friend's copy. I am NOT pirating it !!!
FDJP is serial number protected. On boot time, it checks if the same copy is in use over the network. If it is, it ex-ed out and does not load.
Thanks to all who replied. I wonder if Master Juggler works like that too?

From: JRCLARK
Subject: **Font DA/Juggler problems**
In regards to the query as to why Font DA Juggler would not work properly over a network: both Font DA Juggler and Master Juggler check the network to see if two copies of itself with THE SAME SERIAL NUMBER are loaded concurrently. If it finds a copy of itself, then it will fail to load. Alsoft distributes a version for networks, but I have no idea as to how much this version costs.
Jim Clark, UT Martin.

From: William M. Bumgarner
Subject: **HELP WITH FONT/DA JUGGLER**
Font/DA Juggler is COPY PROTECTED! On a network, when it loads, it checks all other machines to see if they are running the same serial number of F/DA Juggler. If a matching serial number is found, the currently booting machine WILL NOT LOAD F/DA Juggler.
<mild flame on> Kind of annoying if you are a registered user, but you happen to boot after someone took a copy off of your machine without you knowing (office environment, school environment, original disk, many different ways this could happen...). Kind of detrimental if you are a DTP specialist and really NEED those fonts to complete that important document, but can't get to them because someone you don't know copied F/DA Juggler behind your back... <mild flame off>
Question (point): How often does F/DA Juggler listen to the localtalk network to see if there is another one asking for serial number? How long does it take to check the net for others with the same serial number?
One of the reasons why I chose SuitCase II over F/DA Juggler...
b.bum

From: Andrew
Subject: **Serial Port slowing Bootup**
I recently wrote an Imagewriter emulator program for the BBC micro that allows me to print from my Macintosh SE into the BBC's RS232 port and then out to an Epson look-alike printer. The program works fine, but the overall setup causes some strange things to happen.
When I have the BBC plugged into the Mac the Mac takes ages to boot up. Occasionally the SE will also beep a number of times before it manages to start the bootup procedure. This happens whether or not the BBC is switched on. Unplugging the serial cable returns everything to normal.
Do these symptoms look like a short somewhere? Is the Mac power supply overloaded, and hence doing its fancy shutdown procedure? Is this what gives the double or triple beeps? Why would just the startup procedure be slowed down? (After startup things seem to be working normally.)
Answers to any of my questions would be most appreciated.
Thanks in advance,
Andrew Mason
Darwin College
Cambridge UK

From: Stuart MacFarlane
Subject: **Two system folders**
We have a Mac+ and an Apple HD20. We'd like to be able to use either the English operating system, or the Japanese version (Kanjitalk). This seems to mean having two system folders on the hard disc, with some method of telling the Mac which one we are using at present. (Alternatives involve moving lots of stuff in and out of the system folder by hand each time, this is tedious. Putting one system on a floppy and booting from that doesn't work, because applications on the hard disc default back to the hard disc system folder when they exit.) I've heard that there is a PD program called (?) 'system shifter' that might help; can someone tell me how to get hold of this? Or, has anyone solved this problem any other way? Please mail me and I'll post a summary.
Stuart MacFarlane
Heriot-Watt University,
Chambers Street,
Edinburgh EH1 1HX, Scotland
Tel: 031-225 8432 ext19

From: Kathy S Brown
Subject: **Using Network DiskFit v1.5 with the Apple Tape Drive**
Below is the original posting about Network DiskFit v1.5 with Apple's 40SC Tape Drive. Although this tape drive is not the fastest, it does work with Network DiskFit. We have been using it here at Brown since NDF v1.4. We too had trouble with v1.5, mostly because System v6.0.2 takes up so much room on floppy, which one needs to boot from to backup the server.
For our AppleShare servers (one a Plus and one an SE, each with an 80 mg Hard Drive), the key was to have enough CONTIGUOUS space on the HD for the Tape Cache file. Although its over 600k, leave it there after the backup, so it can be used the next time. The other important piece you need is the tape driver, ULDataStream version 2.02. (Which I thought came with NDF v1.5 - else call SuperMac Tech Support). The

other fussy thing about DiskFit, is when to eject the tape. DO IT ONLY when you see the eject prompt - else you may have to start all over at rebooting! But hey - it all works and having NDF on the server for users to use helps too.
Now I have a question. A few users have complained about their first disk in a smartset getting corrupted. I haven't experienced this myself but does anyone know if this is a "real" problem, and what is the workaround? These users claim they had to do the entire backup again. Thanks in advance.
Kathy Brown,
Academic Services,
Brown University

From: John E. Haberland
Subject: **Word personalization**
Does anyone know how to change the personalization box in Microsoft Word? The manual says to copy the master because once you personalize it MS says it can't be changed. Unfortunately my master has died and I wish to change the personalization on my only working copy. Which resource fork does the information lie in? I think I could ResEdit it if I could only find the proper fork. Any help would be appreciated. Thanks.

From: Alex Curylo
Subject: **Word personalization**
Re/personalizing Microsoft Word: Of *course* Microsoft tells you it can't be changed. (What would be the point of putting it in otherwise? :-) Most of the 'personalizable' programs (Microsoft, Claris, I think Videoworks, etc.) save the personal information in a very standard way: in data fork of the application. Zap the data fork, and next time you boot up, it'll ask you to customize it again. If you don't like mucking around like that, there's a program called "Anyonymity" available off many bulletin boards that will replace the personalized information for you or destroy it completely. -
Alex Curylo, student,
Simon Fraser University

From: Klaus Schnathmeier
Subject: **Word personalization**
No John, you are wrong ! This information does not lie in any resource fork, but in the beginning of the data fork. First you have a length byte there, then the desired string follows. I hope you are not going to personalize a "borrowed" copy (*grin*). Working with Microsoft products, you have to recognize them to be of a strange design. The menu-resource for example is not shown in the resource fork (although existant) and so not accessible to ResEdit. It is just "hidden" between all the other resources and can only be changed with a sector-editor. To me this is a problem, for the German Word-version did confuse all the command codes. Applications from any developer are shut down with Command-"Q", not those of Microsoft. They instead use Command-"B" for the German word "Beenden". Every attempt to nationalize computer products is welcome to me, but this is the wrong way. With best regards,
Klaus Schnathmeier
TU Hamburg-Harburg
W. Germany

From: John E. Haberland
Subject: **Word personalization**
I thank everybody for their help in 'repersonalizing' my Word 4.0. For those of you who didn't see how it's done, here it is. Use a program that recognizes data forks like MacSnoop or REdit and open the data fork. Then using the programs' respective commands, set the EOF to zero and relaunch. The program will then prompt you to personalize it just like a clean master would. You can also use this method for other personalizable applications like MacWrite, Excel, and the like.

From: Sigurd Meldal
Subject: **QuickTimer and periodic actions, with many applications under MultiFinder**
For the tips directory?
With QuickTimer (part of the QuicKeys 1.2 release) came the possibility of automatic saves (and other useful actions) at timed intervals. Lovely, I thought, and set about defining automatic saves every 5 minutes (I am paranoid).
As suggested in the manual, I let a bizarre key combination (e.g. command-shift-ctrl-option-keypad-zero) denote the "save" menu choice, and defined the sequence "Periodic" to consist of this keystroke. In QuickTimer I set it to execute every 5 minutes, and I started typing. And what do you know, five minutes later my file was saved. Joy! Except that five minutes later I was in another application, and it did not have a save command - it beeped angrily at me. There were a number of attempts to remedy the situation - let me give the procedure that works:
The problem: I want an application specific action at regular intervals. For some applications it is a save, for some it is to do nothing at all, for some it is something else. The default is to do nothing.
The solution: Enter the Universal part of QuicKeys on the control panel.
Define a sequence which performs the default actions, in my case NOTHING, and assign an unused keystroke to it (e.g. command-ctrl-option- keypad-zero). Call it "empty" or something similarly descriptive.
Define another sequence which consists of the keystroke assigned to "empty". Assign another unused keystroke to that, and name it "Periodic".
In QuickTimer, enter the wished-for interval for periodic actions.
For each application which should do something with the set intervals, define a sequence performing the action, and assign it the keystroke used in the "Periodic" sequence defined earlier.
The result: Periodically, QuickTimer will perform the keystroke given in the sequence "Periodic". If that keystroke is assigned to some action by QuicKeys for the application you happen to be in at that time, then QuicKeys will perform that action. If no such assignment exists, the action assigned to the keystroke in the Universal part will be performed, i.e. the default action (which still is nothing, in my case).
This does not ascertain automatic saves (e.g. I am in another application every time QuickTimer triggers the periodic action), but it certainly is a vast improvement to manually saving work at appropriate intervals.
Sigurd

From: John E. Haberland
Subject: **Virus protection**
My office LAN consists of thirty Mac SEs and Pluses connected to a Mac II server (40 meg) running Appleshare and Lasershare. My problem is that last week I found out that Interferon (being the inferior application it is) fails to detect nVIR a and nVIR b viruses. After running Disinfectant, to my dis-

may, I found that my entire server (and nodes) was infected. I cleaned the server and every disk in the office. I also installed Vaccine on all the system disks as well as in the server's system folder. Does Vaccine (being in the server's system folder) prevent a virus from installing anywhere on the server? Are there special inits for servers that do this? Does Gatekeeper do a better job than Vaccine? Am I correct in thinking that viruses only attach themselves to applications and not documents? Any help would be immensely appreciated as I don't want to go through another fiasco like this again.

From: Joe McMahon
Subject: **Vaccine, GateKeeper, and Servers**

> Does Vaccine (being in the server's system folder) prevent a virus from installing anywhere on the server? Are there special inits for servers that do this? Does Gatekeeper do a better job than Vaccine? Am I correct in thinking that viruses only attach themselves to applications and not documents? ... <

Vaccine protects the system on which it is booted. Therefore, installing it on your server protects your server. I'd recommend GateKeeper for the server, though, as its operation is much more automatic; you tell it what you want to allow and by whom, and it silently permits or denies access as you require, logging any invalid accesses. There is at least one virus (INIT 29) that can attach itself to documents.

From: MLAMMI
Subject: **BookEnds bibliographer**

BookEnds Reference Management System is HyperCard Stackware and it costs $99. Latest version is 1.1, as far as I know. It is provided by:-

Sensible Software, Inc.
335 E. Big Beaver, Suite 207
Troy, Michigan 48083 (313) 528-1950

MS-DOS version is also available (I don't have experience on that, though).

Features:

- Database size is limited only by the free disk space.
- It has categories for author, title, editor, journal, volume, pages, date, publisher, location, keywords, abstract, and classification
- Each category can have up to 30 000 characters
- Convenient import abilities including:
  1. Tab delimited text files (data type typical for most database applications in MacWorld)
  2. Other BookEnds databases (from MacIntosh, Apple II or IBM-compatibles)
  3. Dialog
  4. MedLine/MedLars
  5. BRS, MESH format
  6. BRS, Generic format
  7. MedLine Knowledge Finder (CD-ROM)
- Generates alphabetical listing of all unique authors and keywords in a database
- Export to text files and to other BookEnds stacks
- Duplicate references can be deleted - A Journal Glossary with abbreviations of the journal name for easy source entering
- Boolean AND, OR and NOT searches supported (although a bit limited) - References can to searched by scanning the stack, by the absolute number of the reference, with Search command (scans all the desired categories), or by Find command which scans only one category at the time.
- Matches can be sorted by any two categories
- Output can be formatted easily. 10 editable formats can be used at one time. The order of categories, as well as author and editor names can be formatted (Fonts and styles cannot be formatted)
- Output can be:
  1. Printed
  2. Sent to a text file
  3. Sent to the word processor you like best
- MultiFinder compatible (not copy protected)

These are the main features, some others are still available.

Our experience so far:

We have some 3400 references now, and the worst possible search (that is, searching all the categories and collecting the matches using quite simple AND or OR logics) will take our Mac II (5 MB) about 9 and a half minutes. Searching from one category without a match list collected is almost immediate. By using short search strings the search will be faster. Mac Plus is irritatingly slow (the job would take some 20 min). The most important feature for us is the Import capability. We can import references from Datastar's (in Switzerland) MedLine database >From the on-line log file with a converter program written in Fortran. I get the log file from our library and run a conversion application in our mainframe (VAX) and transfer the file to Mac II using the FTP protocol and import the references. This takes only some 5-10 minutes in all. Datastar's MedLine can be imported without the conversion by using BRS, Mesh format Importing in BookEnds, the drawback is that BookEnds cannot separate the categories in the reference source, so the source will go into category Journal. Also the authors do not always import correctly.

We are quite satisfied with BookEnds, but it could be faster. It might be possible to Import references from CCOD (Current Contents on Disk), since CCOD can output the references in MedLine format. I don't have any experience on that. Anyway, this would add the value of this package.

Mikko Lammi
Department of Anatomy
University of Kuopio
Finland

From: CHGARNETT
Subject: **Hiding LaserWriters on LocalTalk**

I just installed some Macs for student use here at Amherst, and have run into a problem. Students laserprint here by creating postscript files and transferring them to our VAX where they get queued to a PrintServer 40. All the new Macs are connected to an existing LocalTalk network in our staff offices, so they can use our FastPath box to get decent transfer speeds for the postscript files. We have a LaserWriter in our office, too, and that's the problem. The problem is: The LaserWriter in the office shows up in the chooser, so people who don't hold down Command-F at the right time are tying up the "internal use only" LaserWriter. They don't ever see their printouts, either! (*grin*) So, the question: Does anyone know anything about hiding devices on the LocalTalk network so they can only be seen from certain

nodes, or visa-versa? We could always buy another FastPath box and configure them so they don't pass LocalTalk packets back and forth, but that's a pricey solution. Any help would be most appreciated. Thanks!
Craig Garnett
Micro Specialist (yeah, right)
Box 2240, Amherst College

From: Eleanor J. Evans
Subject: **Sick Plus**

Help! My Mac is REALLY sick. It keeps spontaneously rebooting. I have tried it with a noise suppression circuit, and the problem seems to be lessened (though that may be anomalous, because it is very sporadic), but the behavior has not gone away entirely.
The machine cycles, rebooting several times before finally coming up again. The reboot has occurred in a couple of different packages, all of them games, actually (this is a new/used machine).
I'm working on a 2 1/2 year old Mac Plus that I just bought. It was reported by the seller (and previous owner) to have had no previous problems - no need for service.
I'm not sure which details might be relevant - it has just 1 meg, I'm running System 6.0.2, the bomb occurs with the system I got from the seller on floppy and with the system that came on the hard drive I just bought.
The software I've been running is a set of games I've used in many machines over the last few years - Solitaire, Golf, (both by Michael Casteel ??), Billiard Parlour, Iago, Reversi ... I have several copies of all of these programs ... I think they are part of a PD disk distributed by one of the user groups, as well.
The spontaneous reboot has occurred both while trying to click a response, and while a program was just sitting there on the screen. It has also occurred in the Finder, just sitting on a desktop. The machine never comes up cleanly. It always cycles, beeping randomly, sometimes staying blank for several seconds, sometimes bringing up a screen before beeping and/or blanking again. Occasionally I even get the black lines across the screen. :-(
Can anybody suggest a solution?? The noise suppression circuit I am using claims to have EMI/RFI circuitry. Is there a broader band circuit? Would using one help? Should I try doubling up on the circuitry? Is this even the right direction to be looking? Or should I just take this to a dealer and fork over large amounts of money???
Eleanor Evans

From: Dave Platt
Subject: **Spontaneously-rebooting Mac**

Spontaneous reboots may be a sign that your Mac's power supply is either ill, or misadjusted. One way to check this would be to use a good voltmeter (preferably an analog meter) to monitor the +5 voltage at one of the external access points... say, on the output-handshaking pin on one of the Mac's serial ports. If the voltage is more than about a tenth of a volt more or less than 5 volts, or if it jumps up or down when the machine reboots, then the power supply needs attention.
A power supply that's adjusted too low, or too high, can be adjusted by a competent technician (one with Mac experience, of course).
I believe I remember reading that the power supply in the Plus contains an overvoltage-protection circuit, which "crowbars" the +5 (shorts it to ground) if the voltage rises too high. This protects the Mac's circuitry, but causes the Mac to reset. This _might_ be what you're seeing.

From: Tom Coradeschi
Subject: **Printing Excel Formulas**

>Excel (and other spreadsheets) normally display the formula only of the current cell. To check a spreadsheet's worth of formulas or to teach someone how to use a spreadsheet technique or for documentation, it would be useful to be able to print all of the formulas corresponding to a spreadsheet. <
>Does anyone have or know of a program that can take a Excel format file or SYLK file and print out the formulas in it? <
To print formulas in Excel (at least w/ v1.5), select "Display..." from under the "Options" menu. Click on the "Display Formulas" checkbox and print as usual. If the formulas are much longer than the data they normally display, you'll have to reformat your columns, so the whole formula is visible. That's it!
Another Excel related question, which came up as I was verifying the method I've just described. How does one unprotect a worksheet if you can't remember the password? There's gotta be a way. My boss has my manual at home, (and he's on travel to boot) so I can't look it up - assuming it is even in there.
Tom Coradeschi
Electromagnetic Armament Technology Branch,
US Army Armament Research, Development and Engineering Center,
Picatinny Arsenal, NJ

From: John Andrews
Subject: **Printing Excel Formulae**

To print formulae in Excel, use the Display command from the Options menu to display the formulae on the screen, then print — voila, the formulae will print instead of the values (and I think the column width will automatically double, too).
Note that with macro sheets, the process works in reverse — Excel prints macro formulae by default, but can display and print the cell values from the last run of the macro if you change the display option. This is useful for debugging.

From: Mike Dustan
Subject: **Printing Excel Formulas**

Try displaying formulas (choose Display... from the Options menu and click Formulas).
Then save the worksheet as Text. Works every time.
The format is ugly, but everything's there.
Mike

Info-Mac digests consist of submissions by individuals on the academic computer networks. Submission and distribution of these digests is by network, moderated by volunteers at Stanford University.
Usenet is a loosely-coupled network of co-operating academic and commercial computer systems. It is a non-profit network whose primary aim is the sharing of technical information and the spreading of research results.
Delphi is a commercial time-sharing and bulletin board system. The Delphi Digests are made available thanks to Jeffrey Shulman of Rutgers University.

Macintosh Technical Note #229
A/UX 1.1 Toolbox Bugs

#229: A/UX 1.1 Toolbox Bugs
Written by: Dave Radcliffe April 1989
This Technical Note describes the latest information about bugs or unexpected "features" of A/UX 1.1 affecting Toolbox applications and Macintosh binaries running under A/UX. We intend this Note to be a complete list of such bugs, and we will update this Note as necessary to provide you with the latest information. If you know of other bugs not described here, be sure to let us know at the address in Technical Note #0.

You should be aware of these limitations even if you are not explicitly developing for A/UX; you never know when one of your users may want to run your application under A/UX.

Introduction
This Note documents the known limitations of the A/UX Toolbox. These bugs affect both Toolbox applications developed entirely for A/UX and Macintosh binaries running under A/UX. Whenever possible, a solution to work around the problem is described. Not all bugs affect both Toolbox applications and Macintosh binaries. Be sure to check the scope of the bug to see if it affects your application. Also note that only Toolbox bugs are described here; development bugs which may be encountered developing traditional Unix applications are not documented in this Note.

MPW 68881 Code
An implementation goal of the hybrid SANE package provided by the MPW compiler is to provide a consistent exception handling mechanism. To achieve this goal, the 68881 libraries sometimes rely upon privileged FSAVE and FRESTORE instructions. If executed by Macintosh binary applications which run in the user state under A/UX, these two instructions will cause the program to crash. A/UX 1.1 fails to provide a mechanism for SANE to achieve its desired result.

Scope: This bug only affects Macintosh binary applications developed with MPW 2.0.2 and 3.0 Pascal or C and compiled with the -mc68881 option.
Solution: The only sure solution to this problem is not using the -mc68881 option, but if you choose to use this option for enhanced performance, you may still be able to avoid being bitten depending upon the types of floating point operations you perform. In general, any operation or function which is handled entirely by the floating point coprocessor is safe; this list includes the arithmetic operations add, subtract, multiply, divide, and square root. Most elementary functions are safe only if you compile with the -elems881 option (or -d Elems881=true in Pascal). Other functions provided by SANE are not available with the coprocessor, and some examples include the integer and general exponentiation functions XpwrI and XpwrY. For a complete list of functions differentiated by their availability with SANE and with the coprocessor, refer to chapter 28 of the *Apple Numerics Manual*, Second Edition. To check your compatibility with A/UX 1.1, you can do a dumpcode on your application and search the output for an FSAVE instruction; if you find an FSAVE instruction anywhere in your application, it will not run under A/UX 1.1.

Glue Routines
The glue code in /usr/lib/libmac.a for the traps _GetCPixel, _Color2Index, and _Index2Color is incorrect.

Scope: This bug only affects applications developed under A/UX.
Solution: Assemble the correct glue code which follows, and link it with your Toolbox applications if you need any of these routines:

```
            set     CurrentA5,0x904
            text

            global  GetCPixel
GetCPixel:
            movm.l  &0x2004,-(%sp)
            mov.l   CurrentA5,%a5
            clr.l   -(%sp)
            mov.w   18(%sp),-(%sp)
            mov.w   24(%sp),-(%sp)
            mov.l   28(%sp),-(%sp)
            short   0xaa17
            mov.l   (%sp)+,%a0
            mov.l   %a0,%d0
            movm.l  (%sp)+,&0x2004
            rts

            global  Color2Index
Color2Index:
            movm.l  &0x2004,-(%sp)
            mov.l   CurrentA5,%a5
            clr.l   -(%sp)
            mov.l   16(%sp),-(%sp)
            short   0xaa33
            mov.l   (%sp)+,%d0
            movm.l  (%sp)+,&0x2004
            rts

            global  Index2Color
Index2Color:
            movm.l  &0x2004,-(%sp)
            mov.l   CurrentA5,%a5
            mov.l   12(%sp),-(%sp)
            mov.l   20(%sp),-(%sp)
            short   0xaa34
            movm.l  (%sp)+,&0x2004
            rts
```

Cursor Key Codes
The cursor keys return an incorrect virtual key code although the ASCII character code will be correct. The virtual key code is actually the raw key code described in the Toolbox Event Manager Chapter of *Inside Macintosh*, Volume V-189. The correct mappings are shown below:

Key	Raw Key Code	Virtual Key Code	ASCII Char Code
Left Cursor	0x3B	0x7B	0x1C
Right Cursor	0x3C	0x7C	0x1D
Down Cursor	0x3D	0x7D	0x1E
Up Cursor	0x3E	0x7E	0x1F

Scope: This bug affects all applications.
Solution: If your application relies on virtual key codes, you should test to see if A/UX is running and perform the remapping yourself if it is.

Miscellaneous
The following are miscellaneous travails you may encounter in your travels through A/UX development land.

The header file /usr/include/mac/traps.h is not newline-terminated, which may cause the A/UX C compiler to generate strange and wonderful errors. You can add a newline after the final #endif to solve the problem.

The resource include file /usr/lib/mac/rincludes/types.r and the resource compiler utility /usr/toolboxbin/rez are no longer current. If you are developing under A/UX and relying upon newer resource definitions, you may need to compile your resources under the Macintosh OS then move them to A/UX.

_PBGetVInfo always returns the same values in the ioVNmAlBlks and ioVFrBlk fields, specifically 5000 and 1000 respectively. This is true for both Macintosh binaries and A/UX Toolbox applications.

The A/UX Toolbox fails to correctly display the classic QuickDraw color green, instead replacing it with a very dark shade. This is true of both Macintosh binary and A/UX Toolbox applications. Other classic QuickDraw and Color QuickDraw colors display correctly.

Further Reference:
- *A/UX Toolbox: Macintosh ROM Interface*

Macintosh Technical Note #228
Use Care When Swapping MMU Mode

Written by: Cameron Birse April 1989

This Technical Note describes how to avoid crashing when swapping into 32-bit mode on a Macintosh II. Thanks to Jim Berry and Dan Weston for pointing this out.

There is a condition where calling _SwapMMUMode to switch the Macintosh II into 32-bit mode can cause the system to crash. This condition happens in code which is loaded into memory from a resource, or is placed in memory that was allocated by the Memory Manager and is subsequently executed by using the master pointer as the address for a JSR instruction. This condition includes stand-alone, executable code resources (i.e., 'XCMD', 'XFCN', 'INIT', 'ADBS', 'FKEY', etc.), but does **not** apply to standard 'CODE' resources.

When you load code into memory as a resource (i.e., by calling _GetResource), the high byte of the master pointer contains Memory Manager information. If you perform a JSR to the code (typically a JSR (A0) with the master pointer in A0), the entire master pointer gets translated directly into the program counter, including the high byte of Memory Manager information. As soon as you switch into 32-bit mode, the program counter effectively has garbage in the high byte, and the machine goes directly into the weeds (do not pass go, do not collect $200).

You can avoid this problem by cleaning up the program counter from within the resource code before calling _SwapMMUMode. The following example shows how to clean up the PC using MPW Pascal and C with inline assembly code:

MPW Pascal
```
PROCEDURE FixPC;
   INLINE  $41FA, $000A, { LEA  *+$000C,A0 }
           $2008,    { MOVE.L   A0,D0   }
           $A055,    { _StripAddress    }
           $2040,    { MOVEA.L  D0,A0   }
           $4ED0;    { JMP      (A0) ;jmps to next
                       instruction }
```

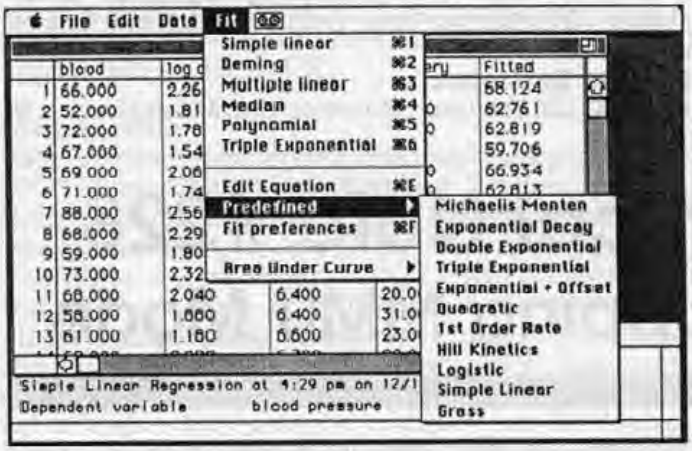
MPW C
```
pascal void FixPC()
   = {0x41FA, 0x000A, /*  LEA  *+$000C,A0 */
     0x2008,          /*  MOVE.L   A0,D0 */
     0xA055,          /*  _StripAddress  */
     0x2040,          /*  MOVEA.L  D0,A0 */
     0x4ED0};         /*  JMP      (A0)
                    ;jmps to next instruction  */
```

Further Reference:
- *Inside Macintosh*, Volume V-591, OS Utilities
- Technical Note #212, The Joy of Being 32-Bit Clean

MultiFit v 1.5

Norah Arnold reviews this Curve Fitting package for the Macintosh.

The greatest strength of this curve fitting package for the Macintosh is that it allows the user to analyse data directly with the non-linear model required, rather than forcing the user to use linear regression, a process which, as the author says, introduces weighting errors.



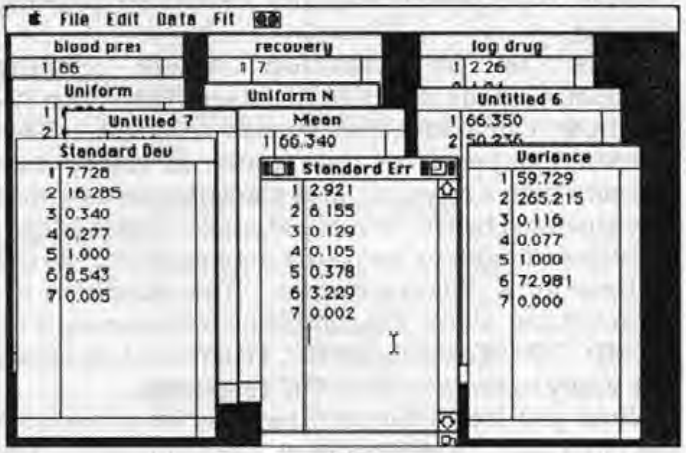
The publicity sheet for this program makes it sound very impresive:- "Your model equation can contain up to 8 variable and 4 constant parameters. Equations are built using normal arithmetic operators: +-*/; ^ (raise to a power); and parentheses. Built in functions are sine, cosine, tangent (all switchable between degree and radian operation), ln (natural log), absolute value, square, square root and exp(e^). Up to 2 repeated sub-expressions can be defined separately and referenced in the main equation."

As you can see from the menus in the window above, the mathematical offerings are interesting and give the program a great deal of potential power.

The documentation is quite good, produced effectively and easy to read and understand. Like nearly all documentation it doesn't always tell you what you want to know.

The User InterFace in MultiFit.

I have one very strong criticism to make of MultiFit v 1.5, and this concerns the implementation of the Macintosh User Interface which falls down at several points. It is good to be able to choose between windows showing only a single data column and a spreadsheet approach which allows the user to view more than one column of data at a time, but the pleasure of being able to switch from one to the other wears thin very quickly because of the limitations of the implementation. For instance, in the spreadsheet mode it is not always apparent to the user how to proceed to, for instance, create a new data column. It is easy enough once you know how to do it, but the Macintosh user should not have to puzzle out why the arrow keys will not function how you expect them to from your experience of other Macintosh programs.



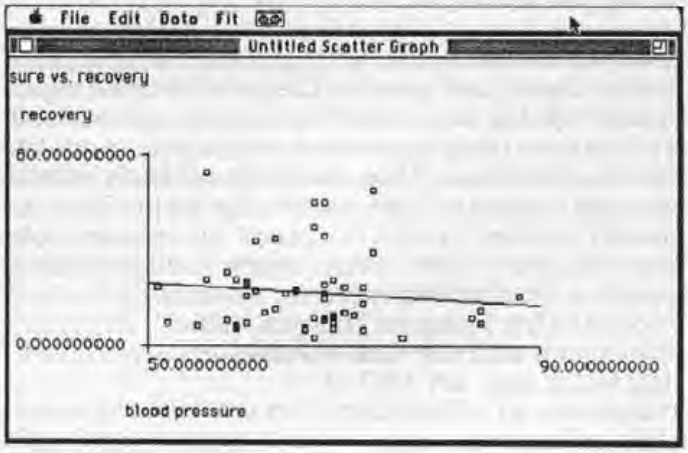
The Logbook is an excellent idea which again is poorly implemented. Using the information in the Logbook window has to be done by selecting the text, copying and pasting into a text-handling program such as a word processor in order to change the font, etc. and print the information. However, it seems that the text selection is not fully implemented. Even if you make the logbook window larger you cannot select all of the particular text you need to copy in one go, without taking the cursor across to the scroll bars, scrolling up a bit, holding the shift key down and extending the selection.

I am not sure whether the name MultiFit applies to the fitting of the mathematical models or the fitting of the numerous windows on the Mac screen. The Apple2000 member who came to me at the MacUser Show asking for the little PD program that "tiles" your windows could very well have been using MultiFit. At one point I had among others, eight windows on the screen, four of which were named 'Fitted' and four named 'Residuals' and I could not blame myself for forgetting which applied to which particular Linear Regression.

The user interface has another serious fault at the moment in that the link to the Standard File routines in the Toolbox seems to be most unpredictable and full of bugs. While running MultiFit on a Macintosh IIx I tried to close a single data column window and a dialog box appeared asking if I wished to save the changes I had made to the window. Before I could respond, the Macintosh IIx crashed and the "bomb" dialog appeared. I tried exactly the same

procedure on a Mac Plus and there was no crash.

Macintosh users become used to the luxury of always being offered a second chance and it is quite disturbing to find a Macintosh program that does not believe the user when the mouse is clicked over the Cancel button. If a data window is selected and the close button is clicked, a dialog box appears asking whether to save the changes. If you click 'Yes' you get a Standard File Save dialog, however clicking 'Cancel' at this point does not, as you would expect, return you to your screen unchanged, unfortunately your original data window has disappeared into oblivion when the dialog disappears. In other words you cancel the Save but not the Close.



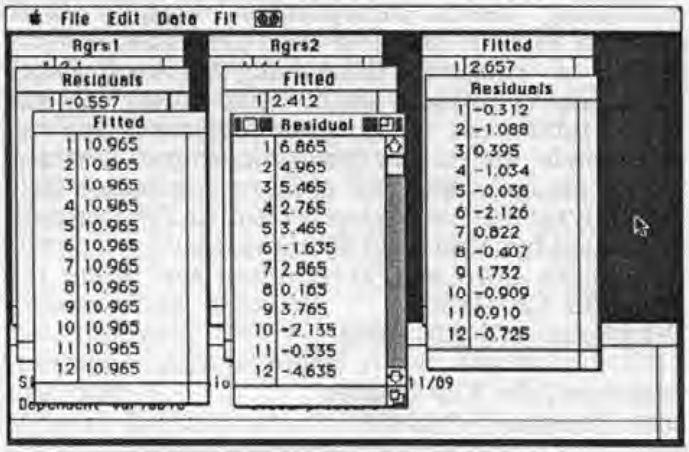
The same type of problem appears when using graphs. If you click the close box on a graph you get the dialog which asks if you wish to save changes. Clicking 'Yes' will get you a dialog asking whether the saved file is to be PICT or MacPaint (again a very useful option and a nice touch if the implementation was better). If you Cancel this, to your amazement, up comes the Standard File Save dialog, and clicking Cancel on this removes your whole graph.

The most disappointing part of the implementation is the graphics capabilities of Multi-Fit. The variety of graphs and tabulations that you would expect to see in a program of this nature are just not there. Also, once you have your Scatter Graph on the screen, the graphics are handled in a very crude way by Macintosh standards. You are able to pick up the axis labels with the mouse and move them, but when you do the label disappears for two seconds (even if you are only selecting it, not moving it), and then reappears making the whole graph shudder. Even this would not put me off if the end result was worth printing and looked really good, but you do not have any control over the appearance of the text, so the effect of the graph does not come up to normal Macintosh standards.

I suspect that the writer of the program may be someone who is quite accustomed to having the annoyance of a poor user interface intruding between his thoughts and his manipulation of the data via the screen. Macintosh users are not used to this and so find it unacceptable to be moving twenty little windows around or struggling with a spreadsheet mode which is not at all intuitive.

Mathematically, the program is better and I have fewer criticisms of it from that angle except to say that in Triple Exponential Fit there is not sufficient checking being done in the mathematical routines. Clicking cancel does not result in any action immediately, sometimes not until a further six iterations. Similarly there appears not to be sufficient checking of the difference between one iteration and the next, with many unnecessary iterations being calculated.

Conclusion



At the moment, I could not recommend anyone to buy MultiFit unless the price asked by some of the better known packages was beyond their reach. However, I hope that the writer of the program continues to refine the implementation, because if he does, then one day MultiFit may be a very good choice.

info

Product: MultiFit v 1.5
Publisher: Day Computing
Available from:
Day Computing
P.O. Box 327
Milton
Cambridge
CB4 4WL
Price: £80.00

Value:
Performance:
Documentation:

Software Circus

Information about some lesser known items of Software.

Software Title: **TableTools**
Date Released: 01/1989
Hardware Compatibility: Apple Macintosh Plus, Macintosh II, Macintosh SE A demo disk is available.
Price in US $ 3.5" disk 395.00
Notes: Designed to meet a wide range of publishing needs. Incorporates versatile table creation tools, a complete word processor, computation of numeric data using Microsoft Excel, placement of graphic, paint, and chart objects inside table cells using other Macintosh applications, style sheets for fast formatting of text and tables. Also provides the ability to exchange data between TableTools & other Macintosh applications.
Published by: Mansfield Systems, Inc.
Publisher's address: 550 Hamilton Ave., Suite 150
Palo Alto, CA 94301
Telephone: 415-326-0603

Software Title: **Key Master**
Date Released: 12/1988
Hardware Compatibility: Apple Macintosh
Price in US $ disk 99.95
Notes: Imports art from Macintosh drawing programs into a high resolution PostScript Font. Resizing artwork is as simple as changing font size. Imports encapsulated Postscript and/or PICT files.
Published by: Altsys Corp.
Publisher's address: P.O. Box 865410
Plano, TX 75086
Telephone: 214-596-4970

Software Title: **Accu-Weather Forecaster**
Hardware Compatibility: Apple Macintosh, IBM PC & compatibles
A demo disk is available.
Memory Requirements: Macintosh 1Mb, IBM 512k
Price in US $ disk 89.95
Notes: Turns a PC or Macintosh into a weather station. Using a modem, users download live weather data, which can then be seen in several easy-to-understand formats – charts, narratives, maps & graphs. The connect-time is kept to a minimum, usually $2 per download. Recommended for home & school education, for weather-related businesses, & for people who enjoy "weather watching."
Published by: Metacomet Software
Publisher's address: P.O. Box 31337
Hartford, CT 06103
Telephone: 203-223-5911

Software Title: **Harmony Grid**
Hardware Compatibility: Apple Macintosh
Price in US $ 3.5" disk 99.00
Notes: MIDI-based improvisational tool which enables users to learn the basics of harmonics. Contains documents through which users move the mouse to learn intervals, chords, modes, and traditional keyboard patterns. The program shows basic harmonic structures with graphics & shapes on the Macintosh screen. Users learn the musical concepts at their own pace and create chords, modes, and interactive instruments. Includes 24 documents, reference cards, over 60 explanatory figures, and material including the basics and more advanced instruction for sophisticated musicians. Supports the Mac's 4-voice internal sound.
Published by: Hip Software Corp.
Publisher's address: 117 Harvard St., Suite 3
Cambridge, MA 02139
Telephone: 617-661-2447

Software Title: **Master Tracks Pro, Version 2.0**
Hardware Compatibility: Apple Macintosh 512E, Macintosh Plus, Macintosh SE, Macintosh II; Atari 520ST, 1040ST, Mega ST
Price in US $ 3.5" disk 349.95
Notes: The Macintosh version is compatible with the Macintosh II & with Multifinder. A dialog window is added for automatic setting of punch-in and out points. Users can also set the punch in/out region by highlighting the area in the song or step windows. A conductor track data window has been added to the windows menu. This window graphically reflects changes made to the conductor track from the change window, or with the pencil and eraser tools. Improvements have been made to elapsed time, quantize window and measure insertion.
Published by: Passport Designs, Inc.
Publisher's address: 625 Miramontes St.
Half Moon Bay, CA 94019
Telephone: 415-726-0280

Software Title: **MetCom Modula-2**
Hardware Compatibility: Apple Macintosh Plus, Macintosh SE, Macintosh II
Operating Systems required: System 4.1 or later
Price in US $ 3.5" disk 245.00
Notes: Integrated programming environment for the Mac includes a multiwindow text editor, a one-pass compiler, and an interactive debugger. The MetCom Editor uses information from the compiler to show various positions in the source program where syntactic errors occur. The one-pass

compiler generates native code for the 68000/68020 Processors, and the code needs no explicit linking. Each compilation produces two files: an object file used by the linker for execution, and a reference file used by the source-level debugger. Programmers can view the execution environment at runtime with the runtime examiner. If an error occurs, the debugger is called. A variety of libraries and Macintosh interface modules are included with the program.
Published by: Metropolis Computer Networks, Inc.;
Publisher's address: Trimex Bldg., Rte. 11
Mooers, NY 12958
Telephone: 514-866-4776

Software Title: **MacFortran MPW**
Date Released: 02/1989
Hardware Compatibility: 68020/68881 or 68030/68882-based system Price in US $ 495.00 Notes: Designed for Apple's Macintosh Programmer's Workshop environment. Fully validatible ANSI 77 compiler including all military 1753 extensions. Also supports most VAX/VMS, many Fortran 8X extensions, namelist, and COmplex*16. Provides complete inter-language calling with the MPW C & Pascal compilers, supports the toolbox, and is 100 percent compatible with Apple's Standard Arithmetic Numerical Environment & the standard Apple debugging environment.
Published by: Absoft corp.
Publisher's address: 2781 Bond St.
Rochester Hills, MI 48309
Telephone: 313-853-0050

Software Title: **KeyMaster**
Hardware compatibility: Apple Macintosh Plus, Macintosh SE, Macintosh II
Price in US $ 3.5" disk 99.95
Notes: Font product that lets users create high-resolution PostScript fonts from Macintosh artwork. Users can organize a library of drawings and print it in line with regular text. Imports images in EPS format from Aldus FreeHand, & Adobe Illustrator and in PICT form from MacDraw II, SuperPaint and other Macintosh object-oriented drawing programs. An integrated bitmap Font Editor allows touch up of the fonts after they have been created. Each font supports up to 16 graphics characters.
Published by: Altsys Corp.
Publisher's address: P.O. Box 865410
Plano, TX 75086
Telephone: 214-596-4970

Software Title: **MacPrint**
Hardware Compatibility: Apple Macintosh Plus, Macintosh SE, Macintosh II
Price in US $ 3.5" disk 149.00
Notes: Device management tool that lets users drive LaserJet, DeskJet, or any Hewlett-Packard compatible printers from a Macintosh. It is installed as a Chooser level device and is then operated with standard Mac printer dialog boxes. The MacPrint Chooser shows each printers' features, and lets users print in duplex and create cover pages. Uses the resident fonts of the printer and also lets users create a printable font based on the Macintosh QuickDraw screen font in print resolutions of 300, 150, or 75 dots per inch.
Published by: Insight Development Corp.
Publisher's address: 1024 Country Club Dr.
Moraga, CA 94556
Telephone: 415-376-9451

Software Title: **Prototyper, Version 2.0**
Hardware Compatibility: Apple Macintosh Plus, Macintosh SE, Macintosh II
Price in US $ 3.5" disk 249.00
Notes: Includes C code generation capability and other features to help a programmer design user interfaces and prototypes of applications. Supports hierarchical and pop-up menus, offers support for large screen monitors, and includes linking facilities to help users create full mock-up prototypes of applications. With the linking facilities, users can link controls to open or close windows, dim or undim menus, or use the Macintosh's standard open, print, page setup, and save dialogs. Supports the leading C compilers, being able to generate source code for Lightspeed C and MPW C. Included are code generators for both Pascal and C. These code Generators also create all standard Mac user interface resources.
Published by: SmethersBarnes
Publisher's address: P.O. Box 639
Portland, OR 97207
Telephone: 503-274-2800

Software Title: **MacTAE**
Date Released: 1988
Hardware Compatibility: Apple Macintosh, DEC VAX/VMS
Memory Requirements: Macintosh 512kk
Price in US $ 5000.00
Notes: Consists of two communications programs that allow a Macintosh to function as a VAX front-end workstation. Based on MacWorkStation, the programs enable users to access data & execute programs on the VAX using the standard Macintosh interface. Supports MultiFinder, allowing users to transfer data from VAX applications into Macintosh Programs. The program also supports desk accessories. A connection command Language (CCL) Provides a scripting capability for automatically logging onto the VAX; Extended code segments (ECS) enable users to integrate programs in custom configurations.
Published by: Appaloosa Systems
Publisher's address: 345 Flume Rd.
Aptos, CA 95003
Telephone: 408-662-2473

Software Title: **CODECHECK**
Hardware Compatibility: Apple Macintosh; IBM PC & compatibles, PS/2
OPERATING SYSTEM(S) REQUIRED: MS-DOS 3.4 or higher; OS/2 Standard or Extended edition; System 6.0 or higher with Finder or MultiFinder
Memory Requirements: DOS 512k, Macintosh 1Mb, OS/2 2000kk
Price in US $ 295.00
Notes: Designed to target code for portability between DOS, OS/2, UNIX, VMS, and the Macintosh environments. Analyses source code for

portability, maintainability, and style, without requiring the programmer to own more than one operating-system based machine. The expert system allows users to modify its rules, allowing them to tailor it for just one platform that users want to port to, or to conform to corporate or individual standards. Users can also alter the program to work in a foreign language.
Published by: Abraxas Software, Inc.
Publisher's address: 7033 SW Macadam
Portland, OR 97219
Telephone: 503-244-5253

Software Title: **Stix**
Date Released: 1985
Hardware Compatibility: Macintosh
Memory Requirements: 128k
Price in US $ 14.95 Warranty included.
Notes: A Macintosh Desk Accessory that fills the same niche as the Puzzle. Stix, in theory, is just a pair of balls connected by an elastic string bouncing around the screen leaving a trail of lines Published by: UNICOM Software Development Group
Publisher's address: 400 Reservoir Ave.,
Suite 3L
Providence, RI 02907
Telephone: 401-785-3636

Software Title: **FlashFinder, Version 2.0**
Date Released: 1985
Hardware Compatibility: Macintosh
A demo disk is available.
Memory Requirements: 128k
Price in US $ 39.95 Warranty included.
Notes: Timesaving Tool for Apple's Macintosh. Lets user open applications & files more than 300% faster than other finders. User can also delete and rename files; files are listed alphabetically and allows user to free up 40k of space on each diskette
Published by: UNICOM Software Development Group
Publisher's address: 400 Reservoir Ave.,
Suite 3L
Providence, RI 02907
Telephone: 401-785-3636

Implementing Undo

Larry Rosenstein, Object Specialist at Apple Computer Inc., answers a question from Paul C. Ossenbruggen

Question: Does anyone have any experience writing routines to handle undo? If you have, could you give me an overview of the procedures involved for implementing it in a graphics environment? I'd mainly like to know how you store the info that has been deleted and then restore it without creating anomolies. It would be really helpful if you had some example code I could look at.

Answer: There are 2 implementation techniques you can use for Undo. I will use a drawing program as the example, since that seems to be what you are asking about.
The straightforward technique is to save enough information so that the command can be reversed. For example, if you move a bunch of shapes, you can save the distance they were moved and then to Undo this you simply move the same shapes in the opposite direction.
This assumes that you know what shapes were involved in the command, which means you also have to remember the selection at the time the command was done. The easiest way to represent selections in a graphics document is to add an isSelected bit to each shape. To remember the current selection, therefore, you can add a wasSelected bit. (This breaks down if you wanted to implement multiple levels of undo, however.)
So when you do the command you copy the isSelected bits into the wasSelected bits, and do the command. To undo it, you copy the bits back, and then reverse the command. This means that after the Undo the selection will be the same as when the command was originally done, which I think is the right thing to do.
This technique breaks down when the amount of information you have to remember becomes large or difficult to deal with. For example, consider the Bring to Front command. In this case you would need to remember the exact position of each shape in the list, so that you can put it back in the right spot. This would either require an index field in each object, or that you make a copy of the list of shapes, etc. Any of these approaches uses a lot of memory. Many commands in a graphics editor are like this (e.g., changing the fill pattern in the selected shapes).
The solution, therefore, is to pretend the command has been done. You don't change your internal data structures to bring the shapes to the front, but you display them on the screen as if the data structures had been changed. You can think of this as a filter that you place between the data structure and the display code. With the filter in place, it looks as if the command has been done, but to undo the command you can simply remove the filter.
Assume that the shapes are normally drawn from back to front. The Bring to Front filter changes this order by drawing all the unaffected shapes first, and then running through the list a second time drawing the affected shapes. Similarly, implementing change fill pattern involves a filter that draws each affected shape with a new pattern, rather than the one stored with the shape.
Using filters adds a complication. When the command can no longer be undone, then the filter must be committed against the data structures. In the case of Bring to Front, for example, this means that when the user does the next command you first have to adjust the list of shapes to (finally) execute the Bring to Front command. Note that you don't do this if the user has undone the Bring to Front command: in that case, the filter is not being used.
In MacApp, we use command objects to represent undoable commands. The TCommand class has a Commit method (in addition to DoIt, UndoIt, and RedoIt), just so that you can implement filtering. MacApp will call the Commit method just before it calls the DoIt method of the next command object (assuming that the old command hasn't been undone).
I don't have any example code that shows the use of filtering, so I can't help out there.

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Second User Corner

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HyperCard Forum

Questions and answers from HyperTalk programmers.

Hypercard access to external applications?
From: Annie Fetter @ Visual Geometry Project, Swarthmore College, PA
Kim@wayne.UUCP recently posted a question on about how Hypercard accesses external applications. There is a brief comment in Danny Goodman's Hypercard Handbook, but not much else (as noted by Kim). Here's what I know about it. The following button script from my home card is an example:

```
on mouseUp
  global machine
  StdFile(machine & ":Applications:RGS 4.0")
  if optionKey is down then
    set cursor to 4
    open "Ready, Set, Go! 4.0"
  else
    put fileName("RSGK") into docFile
    if docFile is empty then exit mouseUp
    set cursor to 4
    open docFile with "Ready, Set, Go! 4.0"
  end if
end mouseUp
```

This button takes me directly to RSG if the option key is down, or allows me to open RSG documents in the folder ":Applications:RSG 4.0". StdFile is an XCMD (?) that tells Hypercard where to look for a file or application. In this case, RSG lives on my hard disk ("machine", or just put the name of your source) in a folder called Applications in a folder called RSG 4.0. fileName is an XFCN which will give you the standard Mac file dialog box, suspending action in the Hypercard handler. You simply pick your file, and fileName will put the name of the file and its complete pathname into docFile. The "RSGK" tells Hypercard what kind of resource it should give you the option to open. "RSGK" is the kind of file created by Ready, Set, Go!. Another example, "WDBN" is the kind created by MS Word. You can find out this type by going into ResEdit, picking a file created by the application you want, and doing "Get Info." This will tell you the resource type. You can also get this using DiskFit. Hope this helps!
Annie Fetter
Department of Mathematics
Swarthmore College
Swarthmore, PA 19081
(215) 328-8225

How about static fields???
From: JimTaylor
Whoah, wait a minute! Am I missing something here? Annie Fetter says she prefers field text to paint text because it looks better. Unless I am sorely mistaken (notice the "escape clause" brought about by "net-foot-in-mouth paranoia"?), they're both exactly the same. In fact, painted text is usually safer than field text because it won't be screwed up if you run your stack on a different system which doesn't contain the fonts you use. Whenever I want my text to look good no matter who's Mac it's running on, I paint it. (Unless there's a lot of it; in which case I make sure to install the appropriate fonts in my stack with Font/DA Mover.)
Jim Taylor
Microcomputer Support for Curriculum,
Brigham Young University

From: Stephen Kurtzman @ University of Southern California, Los Angeles, CA
In his article JimTaylor writes: "Annie Fetter says she prefers field text to paint text because it looks better. Unless I am sorely mistaken [...] they're both exactly the same. In fact, painted text is usually safer than field text because it won't be screwed up if you run your stack on a different system which doesn't contain the fonts you use."
Field text looks a whole lot better when printed on a LaserWriter. When printing the painted text HyperCard can't tell that it should use a LaserWriter font, so it just does a bit map dump. If Apple is listening: Please make HyperCard use LaserWriter fonts for button text. When I print my cards on the LaserWriter the button names always look terrible compared to the text fields.

MacUser SuperCard article...
From: Tony Jacobs @ University of Utah CS Dept
Take a look at the SuperCard article in the February MacUser. SuperCard might actually live up to it's name. SuperCard will support any size & number of windows along with any type of window, menus, graphical objects, standalone stacks, polygon buttons (in fact any object can act as a button), HyperCard stack conversion, compatibility with HyperTalk (future versions too), and then a lot of other advanced features. It sounds pretty incredible. Now, if Apple will just leap frog SuperCard with version 2.0 (perhaps by building it into the operating system or into the Roms or some such wild thing) we'll be getting into some real serious objective programming!
Tony Jacobs
Center for Engineering Design
CS Dept
University of Utah

Trapping RETURN key
From: Joe Melvin @ Class of '91, Carnegie Mellon, Pittsburgh, PA
The following code in your field script will work:

```
on returnInField
  -- your code here
end returnInField
```

You must be using HC 1.2.1 or higher for this to work. See the release notes on this version of HC for more info.
Joe Melvin

Timers and editing
From: Richard G Brewer @ Worcester Polytechnic Institute, Worcester, MA. USA
Andy Stadler writes: Can you post a little more info please? Well here's the sample script:

```
On MouseUp
  wait for 10 seconds
  visual effect dissolve
  go to next card
End MouseUp
```

It would be nice if when one selects a tool from the tools palette, card scripts would become inactive, as this would avoid many a hastle when creating and editing an automated HyperCard presentation. As it is now, I have to enter a unique name for each card, and remember/write down it's name and where it appears in the stack, then type "edit script of card CARDMNAME" from the command box whenever a change needs to be done...
Richard G. Brewer

From: Andy Stadler @ Apple Computer Inc, Cupertino, CA
In answer to Richard G. Brewer:
Well, when you select a tool from the tools palette, the scripts DO become inactive! Actually, the rule is this: Messages are only generated when the browse tool is selected (cursor = hand w/finger). The scripts are there, of course, but when any other tool (button, field, or any paint tool) is selected, no messages will be transmitted. So, I'm still not clear about your problem... Sorry!
Andy

CourseWare
From: Chris Clifton @ Dept. of Computer Science, Princeton University
Does anyone out there know of educational uses of Hypercard? In particular, I am interested in software (okay, I guess I should say stacks, right?) which can be used to set up readings, etc. which follow a curriculum. This isn't for computer science or computer scientists, but a reasonable knowledge of HyperCard on the part of the instructor setting up the course might be a reasonable expectation. Anyway, if anyone knows of something like this, please drop a line. Email is preferable, as I'm not a regular HyperCard user or comp...hypercard reader.
Thanks- Chris

Automated Find: Fact!|Fiction Keywords: Find Tricks, Cheap Tricks
From: Andrew Stone CS.DEPT @ University of New Mexico, Albuquerque, NM
WOW! Here is a really cheap and powerful way to do word searches in an automated fashion. Since a mouseup is sent to a field whether it is locked or unlocked, the locktext of the field does not matter. Basically, if the commandKey is down when you click on a word, the "square outline" of the find mechanism surrounds the word clicked on. Dragging this "find selection" over contiguous words expands it. This places whatever was surrounded into the message box. Releasing the mouse sends the mouseup to the field. Here is a simple field script to put this feature (Dan, is it going away?) to use:

```
on mouseup
  if the commandkey is down then
    put the msg into what
    go NeXT
    find whole what
  end if
end mouseup
```

Comments, Criticisms, Congratulations?
Andrew Stone

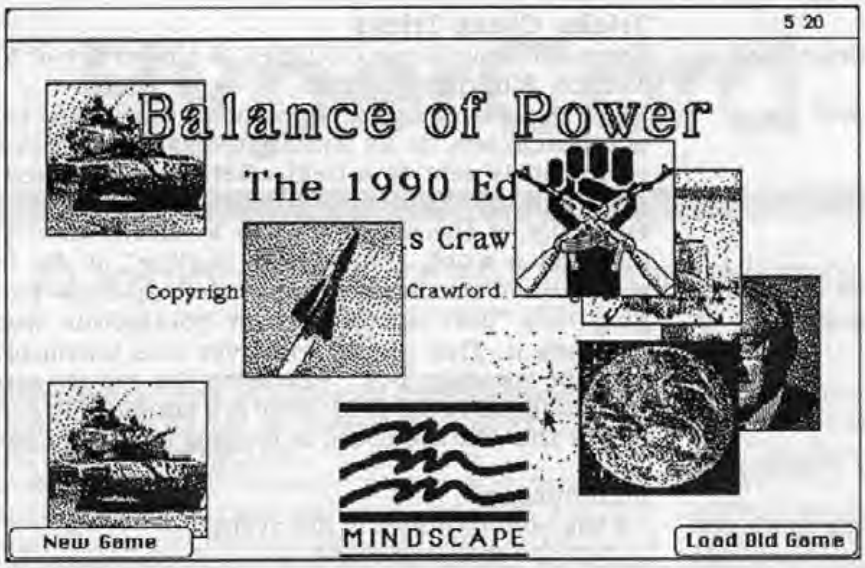
Read from file, write to file
From: Michael J Antonio
Believe it or not, HC actually DOES have an end of file marker. The following script works fine for me.

```
on doIt
  read from file <fileName> until empty
  put the number of chars in it
end doIt
```

When writing to a file, I use option charactors as end-of-field markers. I also use them when reading files into a stack.
MikeA

Using fields with scroll bars
From: Dan Dlugose @ UNC Educational Computing Service
Larry Riddle writes: "In addition, I have a button that is moved over the line where the click was made and then the button's hilite property is set to true. All this works fine. However, my problem is when the user then scrolls to see other lines in the field. As soon as the user starts to scroll, I would like my button to become unhilited so as not to distract from the scrolling field and ruin the visual effect."
I think you'll need overlaying button(s) or field(s). However, one invisible button over everything could decide whether it needed to unhilite any other buttons, and then pass the mouseup.
Dan Dlugose
UNC Edu. Computing Service

Usenet is a loosely-coupled network of co-operating academic and commercial computer systems. It is a non-profit network whose primary aim is the sharing of technical information and the spreading of research results.
The questions and answers printed above were downloaded from Usenet.



An in-depth review by Ceri Fisher, who really enjoyed using this "game"

Playing the Game...

At long last, a long-awaited meeting between me and Balance of Power 1990, the ultimate computer board game.

A player take the rôle of either President Bush or President Gorbachev, and with it, the ultimate responsibility for maintaining world peace for 10 years...

It is possible to not only survive, but win, by making such decisive yet humane policy decisions that the winner's *prestige* surpasses that of the loser.

This question of prestige is central to BoP's 'model' as it bears not only on the scoring but also as a major factor in the separate decisions made during the game.

This may seem strange to some, but consider how the media and world reaction was followed as closely, maybe more so, than the events themselves in recent happenings such as the failed Nicaragua coup, where attention immediately re-focussed on Bush's 'indecisiveness' and how this would itself affect future foreign policy decisions, which would in turn affect how foreign powers sought to relate to him.

There are three levels of play which provide increasingly subtle and authentic control of intervention in world events.

However, the aim is always the same - increase prestige at the opponent's expense, expand the sphere of influence (equivalent to the number of friendly countries), keep the peace.

At the first level, every country apart from the two superpowers is assumed to be in a state of tension between its government and internal "insurgents", and at this level the cause is immaterial: "the primary significance of a local insurgency is that it is an excellent vehicle for pursuing larger and more important superpower goals". *(ref: 'Balance of Power 1990 Edition', The Manual)*

The basic idea is to identify friends, in order to support them if necessary, and enemies who could be replaced by friendlier régimes. A number of different map-display options show international dispositions — the web of international diplomatic relations, the state of internal tension in each country, prestige value and sphere of influence. Any country can also have all display all these factors and variables in a single full-screen table.

Additionally, a very impressive database of actual facts and figures of economic and social factors (presented in the context of the world map — by relative rankings or quartile groupings) is an alternative display to the main game-play and is always available. It would be worth paying something just for that data, although BoP has only 80 countries (that's quite enough for the game!)

Beginner-level tactics focuses on four different "policies":

- •Military Aid (to a government);
- •Aid to Insurgents;
- •Intervene for Government;
- •Intervene for Rebels.

The first two options involve military hardware options and are made by selecting the dollar-value of the hardware to be shipped. The third and fourth involve sending a given number of troops, which is far more sensitive.

Apart from a small amount of "airborne" muscle, hardware and troops must come from a neighbouring friendly country where the superpower's troops are already — an authentic detail.

Game Countries Relations Make Policies Events Briefing

Closeup: Argentina

	USA Value	USSR Value	Totals
Relationship:	Neutral	Neutral	
Prestige Value:	-3	3	(62)
Military Aid:	$20 million	$0 million	$20 million
Insurgency Aid:	$0 million	$0 million	$0 million
Intervene--govt:	(0 men)	(0 men)	0 men
Intervene--rebs:	0 men	0 men	0 men
Economic Aid:	$200 million	† ($400 million)	
Destabilization:	No activity	No activity	
Pressure:	None	None	
Treaty:	(Trade relations)	(Trade relations)	
Finlandization?	Invulnerable	Invulnerable	
Annual Change:	Tiny decrease	Tiny decrease	

Values in (brackets) are maximum possible

Insurgency: Minor terrorism -- Insurgency growing
Govt Philosophy: Slight right
Military Power: Minor
Sphere of Influence: Neither
Govt Stability: Very shaky -- Weakening slowly
Capital: Buenos Aires **Insurgency:** Insurgency

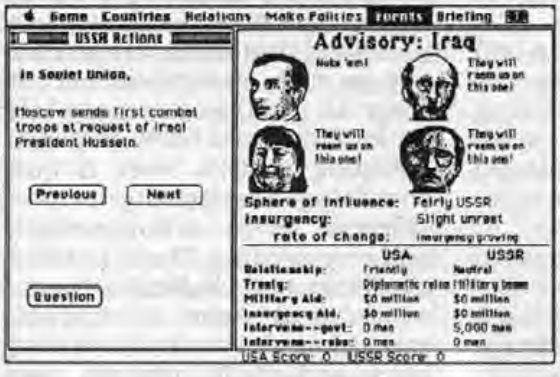
Playing the game at any level involves a cycle of:

- making policies by selecting targets (governments or rebels) for aid or intervention (after studying the Relations and Crises maps, or maybe the different countries' newspapers);
- reacting to the opponent's policy decisions by selecting from the Events menu;

These actions can be done in any order.

Finally, when Next Turn is selected, the computer (or other human) opponent gets a chance to do just the same thing to the first player's decisions and policies.

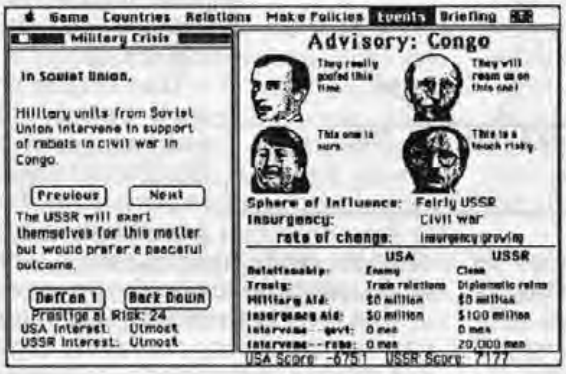
A typical policy decision is sending, say, $50 million of military aid to, say, a country in Africa. If this is one of the opponent's policy decisions then it will show up when the Events menu item is used to show the Opponent's Actions. Other actions also show up here but the decisions which can be reversed, maybe, have a display like that below (this is where the fun begins):



The left hand pane shows the policy decision, and that it is being questioned by the opponent. The right-hand pane shows a panel of advisors and their comments on this situation. At first this seems a bit tacky, and after all, they often seem to be saying much the same thing. Well, I learnt that impression was wrong (and I'll say no more!). There is also a summary below them of the concerned country's relations to the superpowers.

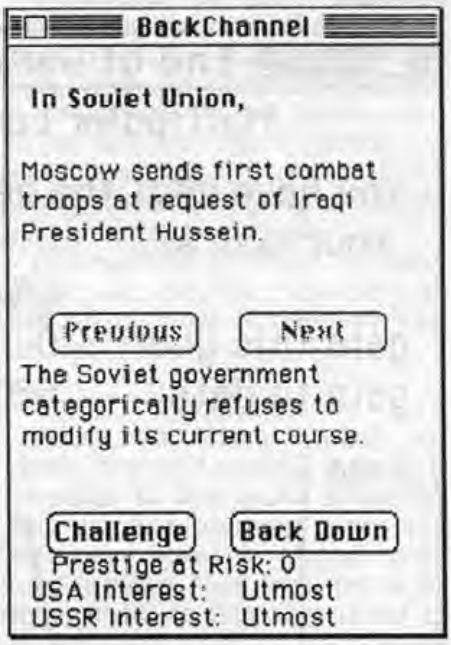
At this point, one can move to the previous or next item in the folder, or, one can **question** this one. This is the diplomatic equivalent of 'raising an eyebrow', and it could just be that the opponent will apologise for some unintended oversight or error. Fine, no harm done, but maybe they are in earnest over this, and they decide to thumb their nose...

The window changes to show a new decision button — **challenge**, (one can **back down** also now) and below it the factors underlying the decisions both sides are trying to make — namely the degree of *interest* of each superpower and, the bottom line, the amount of *prestige* at stake (initially zero until a challenge is made).



Pressing **challenge** turns the matter 'public' and the next flash of the left-hand pane shows a fully-fledged diplomatic crisis, (unless the opponent backed down). Now the stakes are higher — the prestige at stake has started to increase, maybe by a little in most of Africa, maybe by a lot in the Middle East. Backing down at this point will cost that number of prestige points.

Challenging here will take the turn the crisis military, sooner or later (unless again, the opponent backs down first). If the prestige was trivial earlier, it will be high now, and the options become increasingly serious: from Defcon 4 (low level of readiness for Superpower war) to Defcon 1 (Superpower war) can take less than 3 clicks...



"You always lose if a nuclear war starts; no points are awarded for any progress you had made. A nuclear war is always a total loss for both sides."

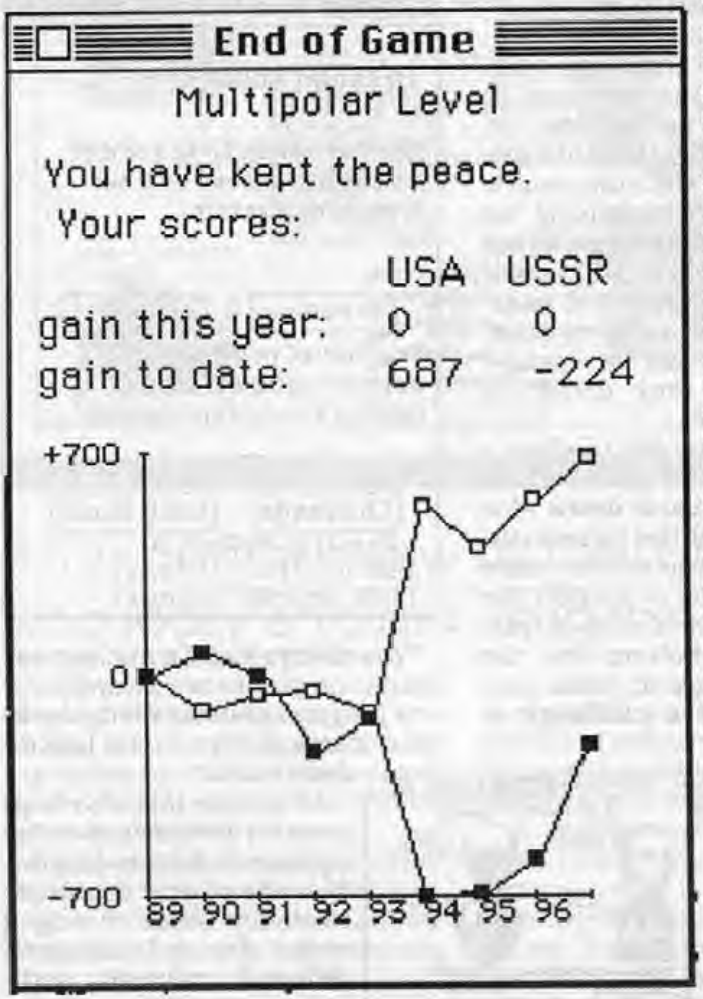
Of course this also happens (in 'reverse') when the opponent chooses to question one of *your* decisions. Normally made during a series of such decisions on different countries, nothing much will happen until it is the **Next turn**. Then, if the opponent is unhappy about it, the same sort of dialogue ensues — with the same possible outcomes...

This is the climax of play: I sit here biting my nails watching one after another of my carefully considered policies being remonstrated against in verbose SovietSpeak, occasionally challenging (then threatening, then going to DefCon 3... Then starting again.) It's a lot like playing poker, I imagine.

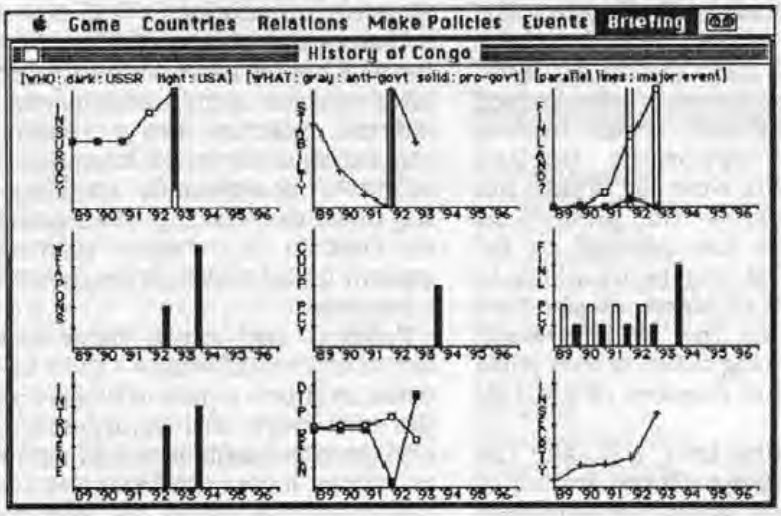
Policies and crisis behaviour are noted world-wide — they become as much a part of history as the civil wars and insurgencies, and the opponent as well as minor countries have some memory for displayed weakness as well as strengths.

At the end of each turn, the score is updated at the bottom of the screen. A pull-down option also shows how the superpowers'

scores have changed since the start of the game, and, at the end of the game, the same graph reappears:



Individual nations can also be examined (using the **Briefing -> History** item) to see how its politics and relations have varied using a screen-full of graphs.



Beginner-level play is, in Mr Crawford's view, merely a taster — a way of getting started. The next level — Intermediate — is accordingly more interesting although it is important to master Beginner-level first.

The model at intermediate level is similar — two policy-making superpowers and 78 other countries each with a different strength and polarity of superpower relationship, each in a variable state of internal imbalance. However, here the cause of any internal friction is assumed to be purely economic. (This may be seem to be too much of an oversimplification — but consider the number of other possible factors; in any case, it is just right for Britain in the 1990's...)

The economic well-being of subject-peoples thus is the main motivation for governmental change, and, appropriately, one of the extra policy 'tools' provided at this level is **economic aid**. This can be used very creatively (and not always positively) — a régime can be toppled partly by building up economic aid over a period of time, then withdrawing it suddenly, together with other simultaneous hostile acts. The other new policy item is *Destabilise* — which covers a range of activities from *Support for dissidents* and *encouraging riots* to *assassinations* and triggering a *Coup d'état*. Of course, these policies can be the subject of a Challenge by the opponent, (and vice-versa) just as previously-discussed options.

The information available at this level is also augmented by options to view economic relations and on-going or imminent coups-d'état. So, why can't living conditions be improved throughout Africa through external economic aid? Well, you can try it !

Of course, intermediate-level play is just a prelude to... expert-level play. Added to the model is the possibility that any non-superpower country will "Finlandize" to one of the superpowers — that is, will become completely subservient for fear of the consequences of not doing so (and despite its apparent politics).

The policy options now include the making of **Treaties** — on a scale from *No relations* and *Diplomatic Relations* to *Conventional Defence* and *Nuclear Defence*. On the negative side, there is the possibility of exerting **diplomatic pressure**. The range of pressure is from *Quiet Diplomacy* (and *None*) — which often goes unchallenged, through *Public Posturing* (sic) all the way to a full-scale *Diplomatic Offensive*: "includes an array of actions such as holding naval manœvres off the coast of the victim, making speeches about their evil ways, or ostentatiously consulting with their declared enemies".

The information available is also now enhanced by a *Finlandize?* map option — showing the likelihood that a country will sell-out to one superpower or the other as discussed already (also in the individual table display).

Playing at this level is quite absorbing — a challenge at many different levels simultaneously, and very exciting. The side-effects of policies and challenges become subtle and more far-reaching, and although I've sketched a very black-and-white picture, successful play is far from so simple.

When expert-level play has been mastered, the top level — "Multipolar-level" play — finally reveals the world as a frighteningly complex place. Each individual country is now an independent agent making its own policy decisions... these "minor countries" can even go to war if

their relations deteriorate sufficiently. Thankfully their policy decisions are restricted to the level of a Beginner — that is, the movement of hardware and forces to a government or an insurgency.

The last extra instrument of policy is now supplied: **Trade Policy** — from **embargoes** to **favoured trade**. This makes not an ounce of economic difference, but can provide a very definite negative diplomatic message.

Minor country decisions can be challenged (if one has Diplomatic Relations) via a "Minor Country News/Crisis" window, and they always back down if enough pressure is exerted — no possible Armageddon. The Minor Country crisis is a curious, third party affair: Colombia (a friend) may be helping an insurgency in Nicaragua which, though an enemy, may have just Finlandised. The advisors say "They won't back down" meaning Colombia, (although any minor country will eventually), and aid can't be given to Nicaragua to bolster up the government because it's in the Soviet sphere of influence. Multipolar play is very tricky !

The Manual

...is excellent. It's well-organised, well-presented, complete and chatty. As well as sections on both the mechanics and the mastery of each level of play, there is a reference section and fascinating chapters on the models used, and answering doubts about the realism of the game. It closes with a good bibliography, annotated with Mr Crawford's comments on each of his sources. Only one shortcoming — no index.

Suggestions

I found it hard to remember which policies I'd made, where, when. Although a **Relations** map display can show the state of all policies (i.e. those which have been successfully implemented), I found I needed a lot of scrap paper to keep track of which countries were getting what kind of treatment. It would be neat to have a single screen/table covering new policies, maybe by area. Also, it would be good if the **Close-up** screen (on individual countries) could also be used to enter or change policies: I found that policies were rarely applied singly, and this would certainly save a number of "pull-downs" for a single country.

It's also difficult (often impossible) to interfere with a country strongly in the Soviet "sphere of influence" — even to use firm diplomatic language against it. At the multi-polar level, I found myself not discouraging my allies who did want to go in there, but it would be interesting to be able to send in Lieutenant-Colonel Oliver North to do our bidding in secret. Such things could even blow into the open the following year to our embarrassment and subsequent loss of prestige.

I wasn't sure if the Diplomatic Relations map was always entirely accurate — certainly the manual warns that relations can change quickly, especially during or after a coup (a democratic election is a kind of coup, by the way, in BoP's view). However, actually checking that hunch was slightly harder, due to not saving the game just before the relations in question changed.

It also seemed to me that aid to a country's government just before a successful coup persisted as aid to insurgents afterwards — presumably, that includes some elements of the deposed government, but it surprised me as treaties are always annulled and it's not documented behaviour. However, this is not a well-tested observation.

Bugs ?

It isn't copy-protected — but there is an occasional check by having to enter a key word from a given page of the manual. It's practically impossible to play without the manual anyway, so don't lose yours!

No DA's. This was one of the biggest disappointments to me — the review took much longer without instant access to Acta or anything. This would frustrate (but shouldn't deter) serious users of this system who wanted to take notes and organise lots of screen-dumps.

It doesn't like MultiFinder.

Screen-savers may be a problem — BoP won't refresh the screen properly (probably the case against DA's). Møiré seemed to be turned off by it.

The game automatically saves to a file 'SavedGame', and doesn't give the opportunity to name a game file (of course, the 'SavedGame' file can be renamed /moved elsewhere, then moved back/renamed again...) or to save just when *you* want to. Also, the automatically-saved game seems to be just one move behind the game just lost to Armageddon... which means making all those policy decisions again!

However, to its credit, it didn't crash or display any strange behaviour at all, (it was tested on an SE).

Conclusion

Those who know enough, or think they do, to see all the shortcomings of this game shouldn't buy it, (the manual says so). Neither should those who couldn't care less. The rest of us may want or feel they need to understand more of what is behind international news-stories. Some of us have a responsibility to others who need to, in schools and colleges. Balance of Power 1990 is an incomparable vehicle for such group and individual work — a real eye-opener. It is a tribute to Mr Crawford, his publishers, the Apple Macintosh, and all who hold to the wide vision of the 'personal computer' as a tool for thought and education.

Rating

It's very hard to rate a product like this on the normal 1-5 indicators. Readers should bear in mind that these ratings are not relative to most of the games which I have come across. "Balance of Power 1990" is in a class of its own.

info

Product : Balance of Power 1990

Available from :
MacLine
01 643 4626

Price : £24.00
(plus P&P and VAT)

Value :
Performance :
Documentation :

User Groups

London Region

ESSEX GROUP

CONTACT - Pat Bermingham Tel : [illegible]
VENUE - The Y.M.C.A., Victoria Road, Chelmsford
MEETS - Third Friday of every month

CROYDON APPLE USERS GROUP

CONTACT - Graham Attwood Tel : [illegible]
VENUE - 515, Limpfield Road, Warlingham, Surrey
MEETS - 7.30pm on the third Thursday of every month

HERTS & BEDS GROUP

CONTACT - Norah Arnold Tel : [illegible]
VENUE - The Old School, 1, Branch Road, Park Street Village, St Albans, Herts.
MEETS - 8.00pm on the first Tuesday of each month

KENT GROUP

CONTACT - Richard Daniels Tel : [illegible]
VENUE -
MEETS - Contact Richard

LONDON APPLE II GROUP

CONTACT - Chris Williams Tel : [illegible]
VENUE -
MEETS - Contact Chris

LONDON MACINTOSH GROUP

CONTACT - Maureen de Saxe Tel : [illegible]
VENUE - Room 683, London University Institute of Education, Bedford Way, London, WC1
MEETS - 6.00pm on the second Tuesday of every month.

M25 BUSINESS MAC GROUP

CONTACT - Jim Panks Tel : [illegible]
VENUE - Sir Mark Collett Pavilion, Heaverham Road, Kemsing, Sevenoaks, Kent
MEETS - Phone Jim for details

SOUTH EAST ESSEX MAC GROUP

CONTACT - Mick Foy Tel : [illegible]
VENUE - D.P.S. Acorn House, Little Oaks, Basildon, Essex
MEETS - First Monday of each month

South

POOLE MACINTOSH USER GROUP

CONTACT - David Huckle Tel : [illegible]
VENUE - Deverill Computers (dealer) Itec House, 34-40 West Street, Poole, Dorset BH15 1LA
MEETS - Four times a year

SOUTHAMPTON

CONTACT - Geoff Parson Tel : [illegible] (work)
Tel : [illegible] (home)
VENUE - Contact Geoff for details

Wales and West

BRISTOL GROUP (B.A.U.D)

CONTACT - Malcolm Ingsley Tel : [illegible]
VENUE - Decimal Business Machines Three Queens Lane, Redcliffe
MEETS - 7th day of each month, or the Thursday nearest to it if the 7th falls on a Friday, Saturday or Sunday.

HANTS & BERKS GROUP

CONTACT - Joe Cade Tel : [illegible]
VENUE - Thames Valley Systems (Apple Dealer), 128 High Street, Maidenhead, Berkshire, SL6 1PT Tel 0628-25361
MEETS - 7.00pm on the second Monday of every month

MACTAFF - SOUTH WALES MAC GROUP

CONTACT -
VENUE - Apple Centre South Wales, Longcross Court 47 Newport Road, Cardiff
MEETS - Contact Apple Centre

Midlands

CAMBRIDGE APPLE USERS GROUP

CONTACT - Il Ian Archibald Tel : [illegible]
Mac Richard Boyd Tel : [illegible]
VENUE - Impington Village College, New Rd, Impington, Histon.
MEETS - Fortnightly during term time with both Mac and Apple II on deck each night.

EAST MIDLANDS MAC USER GROUP

CONTACT - Nick Helm Tel : [illegible]
VENUE - Wilford Cricket & Rugby Club, Nottingham
MEETS - 8.00pm on the first and third Wednesday of every month.

GATEWAY COMPUTER CLUB

CONTACT - Vern Tel : [illegible]
Robin Boyd Tel : [illegible]
VENUE - Bob Hope Recreation Centre, R.A.F Mildenhall
MEETS - AMS conference room, Mildenhall base. Normally at weekends, check with Robin
NOTE : Although the venue is on a service base it is not in a security restricted area so the club is open to interested parties.

LEICESTER GROUP

CONTACT - Bob Bown Tel : [illegible]
VENUE - Shakespeare Pub, Braunstone Lane, Leicester
MEETS - 7.30pm to 10.0pm on the first Wednesday of every month

LIVERPOOL GROUP

CONTACT - Irene Flaxman Tel : [illegible]
VENUE - Check with Irene
MEETS - Second Monday of every month.

MIDAPPLE

CONTACT - Tom Wright Tel : [illegible]
VENUE - I.T.E.C., Tildasley Street, West Bromwich, West Midlands
MEETS - 7.00pm on the second Friday of every month

THE MIDLAND MAC GROUP

CONTACT - Ivan Knezovich Tel : [illegible]
VENUE - Spring Grove House, West Midland Safari Park, Bewdley, Worcestershire.
MEETS - 8.00pm on the first Tuesday of every month

WEST MIDLANDS AMATEUR COMPUTER CLUB

CONTACT - John Tracey Tel : [illegible]
VENUE - Hill Crest School, Simms Lane, Netherton, Near Dudley.
MEETS - 7.00pm on the second and fourth Thursdays of each month.
NOTE - - This is not an Apple user club, it is a general interest club which welcomes users of all machines. There are currently two Apple user members.

North

BURNLEY APPLE USER GROUP

CONTACT - Rod Turnough Tel : [illegible]
VENUE - Michelin Sports Centre
MEETS - 2nd Wednesday of each month

CREW COMPUTER USER CLUB

CONTACT - Paul Edmonds
[illegible]
VENUE - Christ Church Hall, Crewe
MEETS - Fortnightly, Fridays, 7.30pm to 10.00pm
NOTE: this is a general interest group with Apple users among its members

HARROGATE AREA

CONTACT - Peter Sutton Tel : [illegible]
No active organised group in this area but there are a number of keen Apple users in contact with each other.

THE NORTH EAST APPLE COMPUTER CLUB

CONTACT - Philip Dixon Tel : [illegible]
VENUE - Apple Centre North East, Ponteland Road, Ponteland, Newcastle-on-Tyne
MEETS - First Wednesday of every month

THE NORTH WEST APPLE COMPUTER CLUB

CONTACT -
VENUE - Horse & Jockey Pub., Winwick Road, Warrington
MEETS - First Monday of every month

THE NORTH WEST APPLE USERS GROUP

CONTACT - Max Parrot
Tel : [illegible]
Tel : [illegible]
VENUE -
MEETS - Ring Max

Scotland

EDINBURGH GROUP

CONTACT - Ricky Pollock Tel : [illegible]
VENUE -
MEETS - Meetings monthly, check with Ricky

Postal

APPLE II PROGRAMMERS CLUB

CONTACT - Philip Dixon TEL : [illegible]
VENUE - None established yet
MEETS - No meetings yet, has operated through postal newsletter published quarterly
NOTE : Philip started the club some time ago based on a membership fee of £1.00 to cover the cost of newsletters. Original intention was to concentrate on BASIC and Assembler programming.

New Groups

DORCHESTER

CONTACT - Ron Hoare Tel : [illegible]
VENUE -
MEETS Meeting on March 1st -contact Ron Hoare

ORPINGTON COMPUTER CLUB

CONTACT - Terry Wheeler Tel : [illegible]
VENUE - G.E.A. Hall, Woodhurst Avenue, Petworth
MEETS - Contact Terry

DONCASTER SOUTH YORKSHIRE

CONTACT - Colin Withington Tel : 0302-53930
VENUE -
MEETS - Contact Colin

LEEDS

CONTACT - Bob Miller Tel : [illegible]
- T Veluppillai Tel [illegible]
VENUE -
MEETS - Contact Bob

If you want to start a group, find out about a group that might be near you, please write or contact John Lee the Local Group Organiser at the PO Box in Liverpool, or phone John Lee on [illegible].

If you are a local group organiser and have not been in touch with John Lee, please contact John with details of your group, or any changes there may be to the above details.

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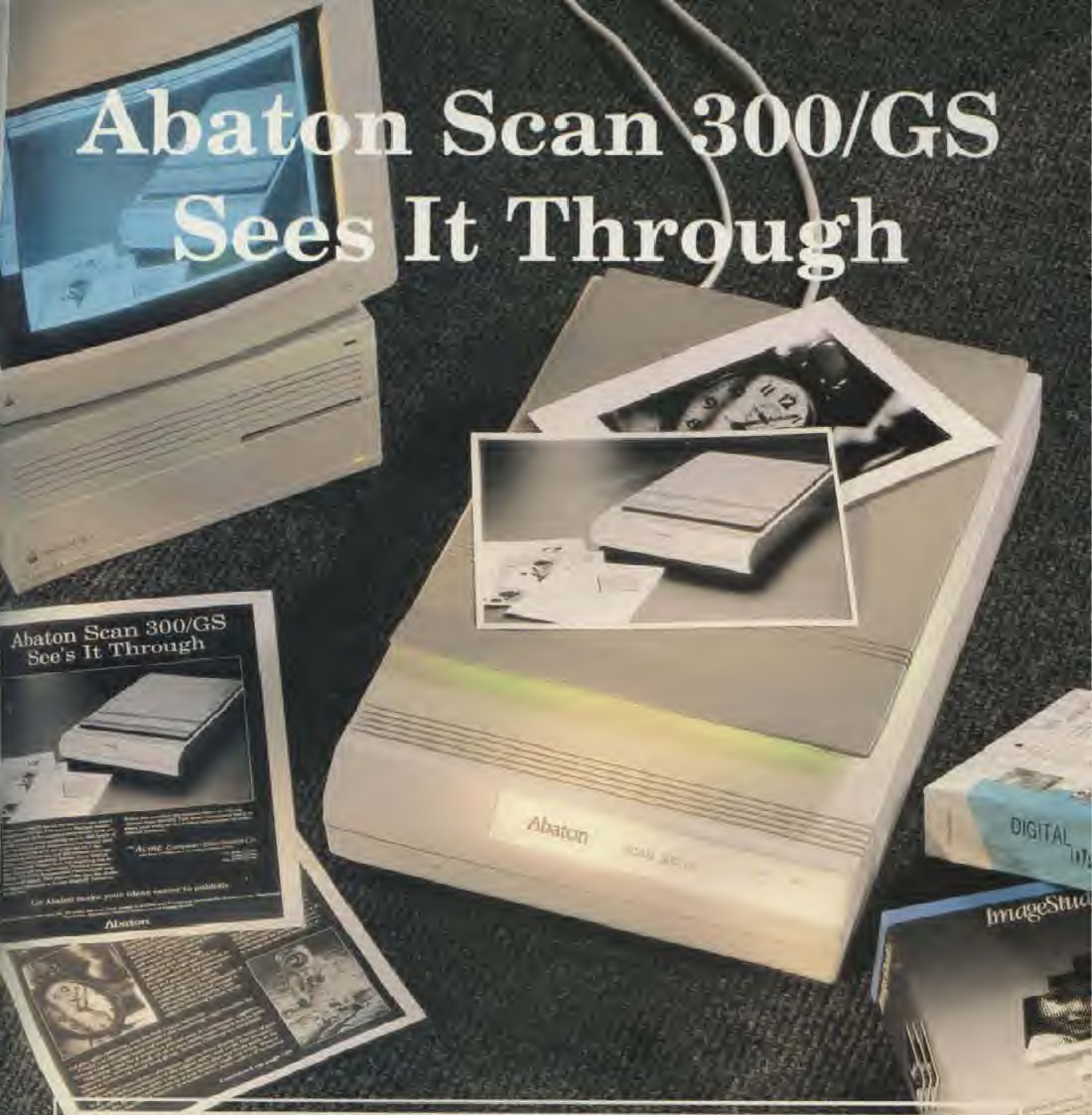

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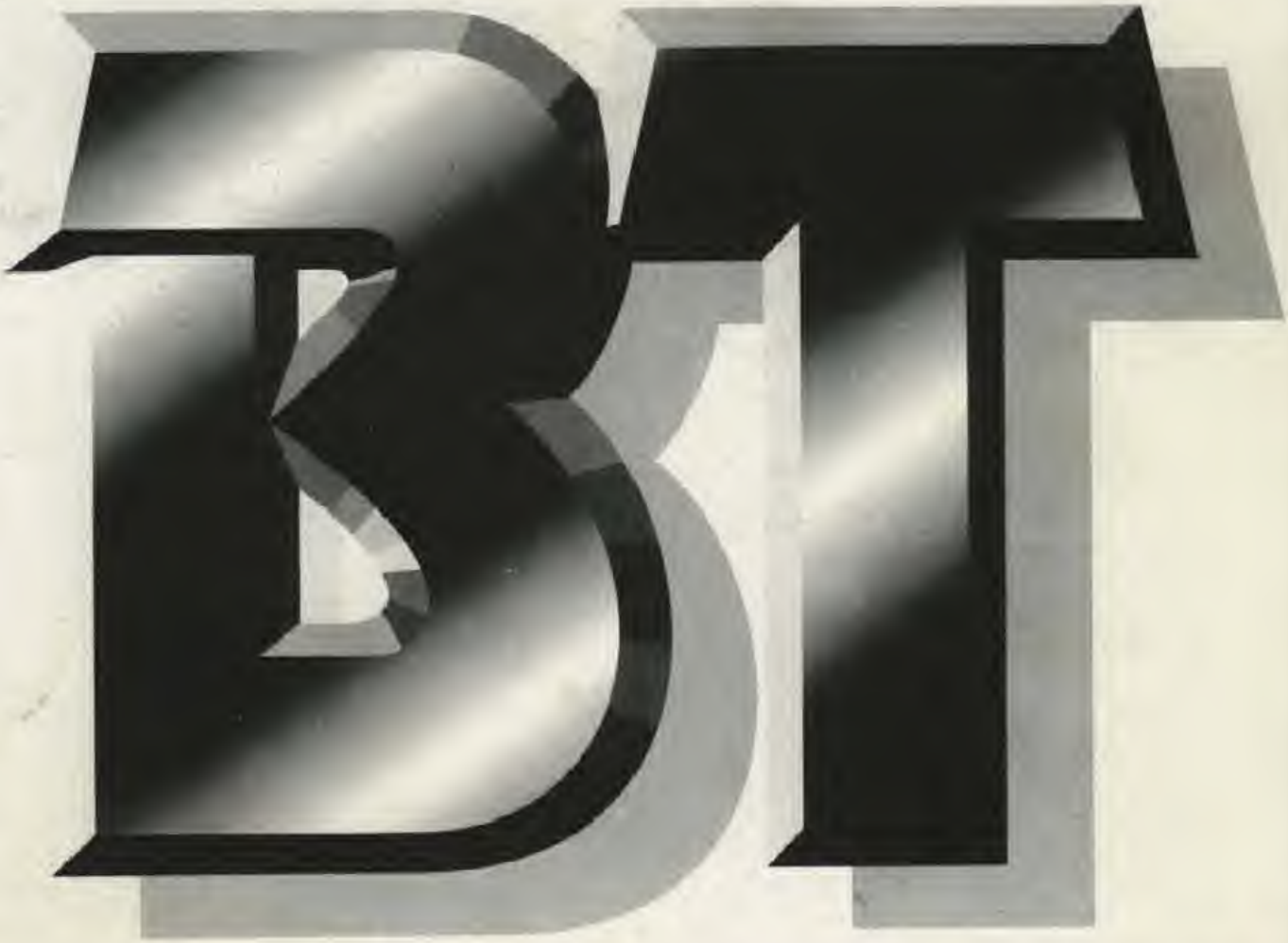

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